The Seven Year Program for Economic Development of Jordan
1964-1970

JORDAN investment NEWSLETTER

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NEW INDUSTRIAL POLICY FOR JORDAN

At this critical juncture of its history, the Hashemite Kingdom of Jordan has a rare opportunity to reorient its industrial development by adopting a strategy which emphasizes quality and direction of industrial production and the preparation of an industrial base designed to back up such reoriented development. This includes suitably calibrated investment in new high-quality human resources and new technology designed to enable the country to compete abroad. Jordan's economy has to become "outward-looking", that is, it must place much greater reliance on exports than heretofore.

Inspite of the temporary disruption of the country by military occupation, the Government has decided to proceed with the implementation of the Seven Year Plan for Economic Development 1964-1970. Although the East Bank retains most of the larger industries, reduced incomes through loss of transit trade and tourism puts the service industries into a difficult position. Development schemes of high labor content will prove to be largely palliatives and it is unlikely that thay will make unskilled labor more productive. Withal, a new departure in industrial development will have to be engineered.

Whereas traditional development is interested in absolute magnitudes, such as growth of Gross National Product, and changes in per capita production, an outward-looking industrial development strategy emphasizes quality and direction of industrial development.

Jordan has temporarily lost resources of absolute magnitude. In order quickly to make good this loss and also to gain an important starting advantage, a change of emphasis in industrial development from a quantitative to a qualitative orientation must be made.

The immediate problem is to take up the slack in the service industries. Tourism has been hardest hit; so have transport, banking, insurance. The obligation for the Government now is to redirect finance and resources in these industries towards new endeavors which are principally export-oriented.

The next problem will be the reintegration and reorientation of the other industries into the newly created "outward-looking" industrial complex.

As a first step in the way of tackling such a reintegration and reorientation a systematic survey of export probabilities will have to be undertaken. Probabilities come first, identified by intensive foreign market research. Export possibilities no longer based exclusively on natural resources can then be developed within the framework of a systematic new industrial program to be drawn up by the Ministry of National Economy in collaboration with the Development Board and the private sector.

To get such an export effort off the ground, Jordanian industry must undertake an intensive program of market identification and export promotion. This effort will have to proceed on all levels and will entail the closest cooperation between Government and private business.

The Government's effort in market research will be one of collecting and transmitting information on markets abroad, needs and demands, and to pinpoint sources of existing and potential competition. In short, the Government's reporting will cover the whole gamut of commercial intelligence.

In the area of export promotion, the Government's effort will take the shape of a careful system of encouraging industries to start "looking outward" towards meeting competition in foreign markets. This will include selective incentives for increased export performance in all sectors. The Government also will lead the country's participation in trade fairs abroad.

Even on a small scale, the export of manufactures provides valuable industrial and commercial experience. In a country at Jordan's stage of development the selling of the same value of output abroad, rather than at home, exerts greater pressure for quality performance. Exports open the way to further exports through the accumulation of know-how both at home and abroad; and successful export performance contributes to successful competition at home.

Technological improvement, or improvement in the quality of a country's performance is only acquired by competitive pressure. In a country such as Jordan, only foreign competition can generate the pressure required to set off this desirable chain of events.

Trade between countries bridges gaps not only in resource endowment but also in technological know-how and skills; almost invariably the bridging of the second gap exceeds in importance that of the first.

A new orientation is required to create this new trade potential. This reorientation would include three elements: 1. continuous technological upgrading; 2. cost reduction - by higher productivity but possibly also by a change in the overall price structure; and 3. quality control and standard maintenance to create trust in Jordan's industrial performance, an absolutely indispensable ingredient of the whole exercise.

The first and third points are self-explanatory. The second point would involve the selection of measures which would enable the country to tackle its two principal groups of prospective markets: The Arab countries, particularly those in close physical proximity; and Western Markets, especially for high grade consumer goods. This does not mean that trade with other countries should be neglected.

The major classes of recipients of Government support to be made available under these circumstances are two:-

a. New industries whose suitability in the first instance will have been identified by appropriate pre-investment studies;

b. "Outward-looking" industries selected from those already existing in the country, which could contribute to strengthen the country's export potential. One such industry is cement; another, phosphates. More could probably be found among food products, handicrafts, including ceramics and glass, assembly of household appliances, printing, glucose, paper products, pharmaceuticals, cigarettes, batteries, worsteds, woolen blankets, alcoholic beverages, animal feed and kitchen utensils.

The private sector under Government guidance must inspire itself for greater and better industrial performance. And in the process of improving technological skills, the private sector must not forget the upgrading of managerial skills, an indispensable adjunct to higher quality performance. Combining strictly "industrial development" and human resources development, particularly in the basic managerial skills, such as costing, budgeting, and quality control will be indispensable in order to achieve massive promotion of high quality goods to be produced in Jordan. A long-range intangible gain from this approach may be an induced "brain drain" of highly skilled Jordanians to other Arab countries requiring their services and the increased remittances from such expatriates.

In order to proceed with programming the foregoing development, the following eleven steps are contemplated;-

1. A full-scale industrial survey to determine what industrial capacity actually exists in the country.

2. A closer examination of existing industries for possibilities of accelerated diversification and technological upgrading, always with the idea of capturing new foreign markets in mind. For existing facilities the Government will encourage better utilization of installed capacity, and provide incentives for having these enterprises take steps eventually leading to the termination of non-rationalized operations.

3. Licensing of new industries and expansion of old ones in line with the new orientation for industrial development. New licenses will be issued only for new products supported by extensive market research with reference to export possibilities; the home market will be regarded as secondary.

4. Strengthening export potential of existing "outward-looking" and new industries by suitable measures of support. This will include, among other types of assistance, provision of export credits, and export credit insurance; fiscal incentives such as duty-free admission of machinery and materials, rebates of internal and external duties and retention quotas of percentages of export proceeds; and help in commercial advertising and participation in trade fairs abroad.

5. Gradual reduction of restrictive controls on performance of "outward-looking" industries, liberalization of imports of raw materials and provision of ample credit facilities; time limits and arrangement for the tapering-off of import restrictions on competing products; and utilization of all facilities provided in the "Jordanian Law for Encouragement of Investment".

6. Programming of Market Research led by the Government. This will include: a. showing what is needed; b. showing how to get the information; and c. disseminating the information to industrialists and their organizations. It will also entail a strengthening of the commercial intelligence reporting of the Jordanian Foreign Service.

7. Detailed investigation of the feasibility of setting up an industrial estate located in a "free zone", and devoted primarily to the production of high quality goods for export. The Zerka-Amman area will be a leading candidate for the establishment of such a district, because of anticipated external economies resulting from the availability of basic services. Since no heavy industrial production is contemplated, distance from a seaport would be no immediate disadvantage; however, the rapid implementation of the Aqaba Free Port remains as urgent as ever.

8. Establishment of a National Standards Institute and provision of machinery for export quality control.

9. Implementation and encouragement of concomittant development of higher skills at the managerial, technical, and shop levels, as an essential ingredient in the new program.

10. Measures by the Government in cooperation with private industry towards an effective redirection of labor from the redundant service industries and other relatively unproductive endeavors, to export industries.

11. Introduction of a suitable law under which a levy of a certain percentage of annual earnings is imposed on companies. The levy is collected in a special fund, and refunds are made to companies for purposes of training of personnel at all levels.

The Government already has begun actively to move ahead on a number of these steps. Within recent weeks it has concluded trade agreements with Iraq and U.A.R. removing many still existing obstacles to free trade, and also envisaging a marked increase in value of Jordanian exports. In co-operation with the Ministry of National Economy's Industry Department and the Jordan Centre for Industrial Development (See JIPO Newsletter No. 5 of November 1st 1966), the Department of Statistics is intensively preparing for the detailed industrial survey. The Centre for Industrial Development, in addition to initiating a study on fertilizer production and on a central metal can producting facility for the food industry, has started with its training program in managerial techniques. As further steps are taken, they will be reported in this Newsletter.

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The Hashemite Kingdom
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SEVEN YEAR PROGRAM
FOR ECONOMIC DEVELOPMENT
1964-1970

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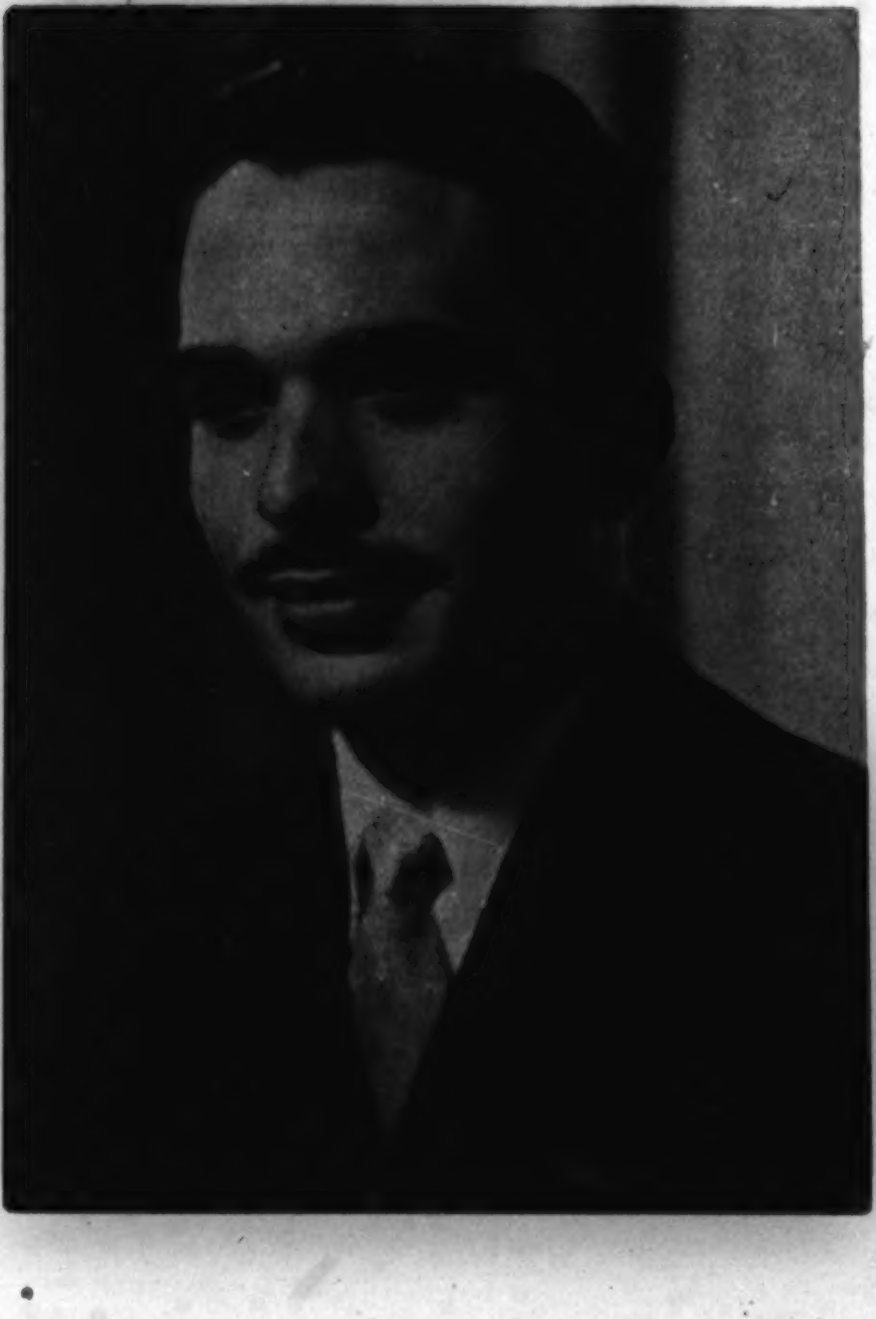

Having reviewed the final version of the Seven Year Program for Economic Development 1964-1970, and noted the decision taken by the Council of Ministers in their meeting held on 22/12/1965, we approve of the Seven Year Program and hereby instruct the Government to adopt it and to consider it the basis for the development policy of the Kingdom and for the State Budgets for the coming years. We look forward to see that all efforts are made to achieve the objectives of this Program within the scheduled period so as to attain the over-all aim of self-sufficiency with the Help of God.

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CONTENTS

CHAPTER 1 Introduction 1
2 The Jordan Economy 1964-1970 . . . 18
3 The Fiscal Program 45
4 Government Administration 58
5 Agriculture 74
6 Water 165
7 Tourism 176
8 Mining 192
9 Manufacturing Industry 200
10 Transportation 216
11 Communications 238
12 Electricity 246
13 Education 261
14 Health 291
15 Housing and Government Buildings . . . 303
16 Social Welfare, Labor and Co-operatives . . 308
17 Trades and Services 325
18 Financial Institutions 335
19 Statistics 347
20 Local Government 354

EXCHANGE RATES:

1 Jordan Dinar = 1000 fils
= 1 £ sterling
= 2.80 $ U.S.
J.D. 0.35714 = 1.00 $ U.S.

CHAPTER 1 *INTRODUCTION*

The Hashemite Kingdom of Jordan is convinced that flexible long range planning is necessary for the achievement of its economic and social objectives. With a small domestic market of 1.8 million people of whom 45 per cent were under 15 years of age at the time of the 1961 Census, with an increase of three per cent per year in population and four per cent per year in the labor force, with limited natural resources in agriculture, forestry, and mining, and with limited capital resources available for financing development projects, these scarce resources must be used in such a way as to make the maximum contribution to achieving the overall goals of the nation.

With these considerations in mind, Jordan produced a "Five Year Program for Economic Development 1962-1967" which set out these goals for the economy and presented a large number of specific study and action projects. A number of the projects enumerated in that Program were implemented or begun in 1962 and 1963. However, by early 1963 it became evident that substantial changes in emphasis were required as a result of reductions in the level of budget support [1], particularly that received from the United States, and that a corresponding revision of the Program was necessary. The uncertainty of the financial outlook suggested, among other things, that increased weight should be given to the policy of improving Jordan's chronic foreign trade deficit, in spite of the fact that this could probably be achieved only at the cost of a decline in the rate of economic growth. The introduction of such changes into the present Seven Year Program (1964-1970) does not indicate abandonment of the original Program, but does reflect a substantial rearrangement of the priorities of its goals and specific projects in response to changing economic conditions and financial availabilities.

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[1] Budget support refers to the aid given to the Government of Jordan to be incorporated into the general revenues of the Government. The use of budget support funds is not specified by the donor government, as is the case with development grants.

In order to view the Seven Year Program in perspective it is first necessary to review the economic setting and, particularly, recent economic developments.

The Economic Setting

The economic setting in which Jordan operates has been affected by the vast problems arising out of the events of 1948. Within a few months, Jordan's population increased almost threefold without a corresponding increase in resources. Furthermore, Jordan was faced with the necessity of completely rerouting its trade and lines of communication. Previously these had been directed westward to the Mediterranean coast where there were modern ports, airports, highways, railroads, and tele-communication facilities. After 1948, however, Jordan no longer had access to these facilities and it became necessary to develop new trade routes and lines of communication. The unusual pressures which Jordan faced made it necessary to compress infra-structural developments which in most countries have taken place over a number of generations into a much shorter period of time.

The people of Jordan, through their own efforts and with considerable assistance from external sources, have been able to overcome many of the apparently insurmountable problems facing the nation in 1948. On the favourable side there have been three major achievements. First, available data indicate that Gross National Product has increased from an average of JD 51.1 million in the two years 1954 and 1955 to an average of JD 131.9 million in the two years 1962 and 1963 — an increase of 158 per cent in seven years. This is a higher rate of increase than is to be found in almost any other country. Second, a number of projects have been initiated which have not yet borne fruit, but which will, when completed, lead to further large increases in national output. Third, the price level has apparently remained remarkably stable during a period in which other countries have experienced serious inflation. This has promoted confidence among investors concerning the stability and future of the Jordan economy.

On the unfavourable side there are four major problems. First, the balance of trade is weighted heavily against Jordan. In 1961, receipts from exports of goods and services were 27 per cent of imports of goods and services while in 1963 the figure increased to 33 per cent. Out of domestic expenditure of JD 170 million on consumption and capital formation almost one-third, or JD 61.1 million, was spent on imports [2]. The result has been heavy dependence upon external funds to offset the trade deficit. It is recognised, of course, that the process of economic development normally involves a trade deficit. The limited local production of consumer goods in Jordan's case has meant that a large proportion of Jordan's imports has of necessity been in the consumer goods category. For example, in 1963, about 67 per cent of all imports went into private and government consumption.

Second, and closely related to the first problem is the level of budget support. The circumstances of Jordan's origin and subsequent economic development have necessitated heavy dependence on foreign aid, including support for Jordan's regularly recurring government expenditures. Of JD 37.6 million anticipated government revenues in the 1963-64 budget, budget support of JD 14 million constituted 37 per cent. Development grants and loans of JD 6.4 million made up another 17 per cent. Approximately 46 per cent of its budgeted revenues were collected by the Government of Jordan.

The Government must now contemplate a major reduction in budget support. The implications of an overly rapid decline from the present pattern of support are serious; the unfavourable effect which this would have upon Jordan's administrative capability and thus upon its potential for economic development cannot be lightly dismissed. Given the uncertainties surrounding the total availabilities of financing for additional investment expenditures over the period of the Seven Year Program, it becomes starkly clear that every consideration must be given and every effort exerted to mitigating, as well as adjusting to, the impact of the lessening in the support of Jordan's budget. The present Program faces up to this situation.

The third problem is that despite considerable increases in recent years, per capita income remains low. In 1963 the Gross National Product averaged about JD 75 per person — still a low figure, although nearly double that of 1956. Associated with low per capita income are the low productivity of labor among those who are working and the high proportion of those who are too young for the labor force or are unemployed.

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[2] Data for 1962 are somewhat misleading (and are not quoted) because of the large non-recurring oil Tapline payment in that year. In 1963 exports of merchandise were 13 per cent of merchandise imports.

The fourth problem is the level of unemployment. While estimates of the level of unemployment had ranged as high as 25-33 per cent of the labor force, the 1961 Census indicated that only seven per cent of the "economically active" population were "seeking work". However, another 9 per cent of the males 15 to 64 years of age were classified as "economically inactive" and were not in school. While this additional 9 per cent included an unspecified number of retired or incapacitated persons, it is probably a measure of considerable "disguised unemployment" in addition to the seven per cent who were seeking work. In summary, it appears that unemployment amounted to about 12 to 14 per cent of the male labor force in 1961.

In addition to the unemployed, there were undoubtedly a large number of workers who were "underemployed" in the sense that their levels of output were much lower than might have been obtained considering their training and capacity. The extent of such underemployment cannot be measured.

The Challenge to Planners and Decision Makers

The 1961 Census presented a picture both alarming and challenging. Only 19 per cent of Jordanians were in the age group 35 to 64 — the group from which must come most of Jordan's administrators, managers and leaders. If the economy can provide, through its own efforts and adequate assistance from friendly governments, employment opportunities for the large numbers who will enter the labor force in the next seven years, a great impetus will be given to development. If there is insufficient employment, however, economic, social and political problems will be seriously accentuated.

The Census of 1961 provides other data which indicate how crucial it is to use scarce financial resources carefully. In that year 56.5 per cent of the boys and girls 6 to 14 years of age inclusive were in school. While this is a vast improvement over previous years (31 per cent of the people over 14 years of age in 1961 could read), nevertheless it indicates that a considerable proportion of the future adults of Jordan will be illiterate, with all of the personal, economic, and social frustrations which illiteracy involves. In 1961 it took about JD 15 per student for Ministry of Education Recurring Expenditures (for teachers, school rentals, supplies, etc.). Thus every time a decision is taken to spend JD 100,000 on a road, air line, or in any other way, about 6,670 youngsters must miss one year of school.

This is not intended to indicate that education has a higher priority than roads or any other type of expenditures, but merely to illustrate the frightening responsibility of planners and decision-makers in allocating scarce funds to the best uses, particularly when such a basic need as education is not being fully met.

The Jordanian people have been called upon to make major sacrifices throughout the history of this young nation; and they are prepared to make sacrifices now and in the future, to advance the country's economic development under the Seven Year Program toward the ultimate attainment of economic independence. The sympathetic support and effective financial assistance of friendly nations will be needed, however, to insure that their efforts and sacrifices will not be in vain.

Goals of the Seven Year Plan

Jordan's Seven Year Program 1964-1970, has been prepared through close co-operation between the various government ministries, departments, and authorities, on the one hand, and the Jordan Development Board, on the other.

Goals have been established by the Government of Jordan in the following order of importance :

First, major reduction in the external balance of trade deficit and such reduction in dependence upon budget support as Jordan may be able to sustain.

Second, an increase in per capita income at as rapid a rate as possible, consistent with Goal One, and

Third, a reduction in the level of unemployment.

This represents a change in the order of importance of the goals from the earlier Five Year Program in which the goals were income, employment, and balance of trade, in that order. The over-all goal of the new Seven Year Program is to move Jordan as rapidly as possible toward economic independence.

Reduction in dependence upon budget support, as it is feasible, will reduce the vulnerability of the Jordanian economy to external changes of policy. Premature and excessive reductions in such support, however, will measurably retard Jordan's development, and will materially postpone Jordan's attainment of economic independence.

There are good reasons for the decision to give top priority to the goal of improving the balance of trade. Development projects which increase exports or reduce imports automatically increase national income, whereas projects which increase national income do not necessarily increase exports — in fact they frequently increase net imports. In 1963 it appears that out of every JD 100 spent by Jordanians (i.e. Gross Domestic Expenditure), JD 28 was spent on imports, of which approximately JD 20 was spent on consumer goods and services and JD 8 on investment goods and services. It is obvious that there is a considerable leakage of income into foreign purchases of consumer goods and services. The propensity of Jordanians to spend on imports a considerable portion of the income generated by exports reduces the net advantage of exporting as a means of redressing the trade deficit, and points to the necessity of supporting development projects which result in a replacement of imports by domestic production, as well as supporting those projects which increase exports.

Giving top priority to the goal of reducing the external trade deficit and to such lessening of dependence upon budget support as Jordan may reasonably be able to sustain by no means eliminates the need for the possibility of increasing national income and reducing unemployment. Acceleration of development projects designed to increase exports and/or reduce imports will increase national income and reduce unemployment.

Assumptions Basic to the Program

Recent changes in the economic setting have affected the basic assumptions upon which the Seven Year Program is based. Assumptions as to economic and political developments, whether explicit or implicit, are basic in all economic planning. Several of the assumptions in the earlier Fiver Year Program, made at the time the Program was being prepared, seemed entirely reasonable; unfortunately, changing circumstances have made it necessary to revise these assumptions. The assumptions on which the present Program is based are as follows :-

a) That, if all goes well, and with great effort, Jordan may be able to sustain a reduction in budget support assistance from JD 14 million in 1963/64 to JD 11.0 million in 1967/68 and to JD 6.0 million in 1970/71. To the extent that total budget support assistance supplied by the US and the UK falls short of these amounts, Jordan will find it necessary to negotiate with these or other countries for the additional amounts required.

b) Development loans will become available in considerable magnitude throughout the period 1964/70 and will increase proportionately more than development grants. A total of about JD 100 million must be borrowed abroad by the Central Government during the seven years of the Plan. Almost JD 22 million of this amount is scheduled for net re-loaning by the Government to the private sector and to municipalities. The increase in borrowing from abroad has two major implications for Jordan. First, the repayment of such loans in the future will involve acquiring foreign exchange; this emphasizes the crucial position of Jordan's balance of payments and the necessity for promoting the rapid development of export industries and import-reducing industries. Second, an increase in long-term obligations makes it all the more essential that Jordan have considerable foreign exchange reserves to meet any unfavourable events which might reduce her ability to earn foreign exchange. Not only, then, must Jordan have increased earning of foreign exchange, but it must keep increased reserves against unforeseen eventualities.

c) Development grants and PL 480 revenues will remain stable at about JD 3.5 million throughout the period.

d) Public Law 480 grants of commodities in surplus in the United States will continue to make up much of the deficits which Jordan may experience in wheat and feed grain and possibly other commodities throughout the period.

e) Prices of imports, exports, and domestic goods are assumed to remain constant over the entire period. A disproportionate change in these prices would have significant effect on some of the real components of the economy.

f) UNRWA operations of a magnitude and cost similar to those of 1963 will be continued throughout the period.

g) Remittances from Jordanians working abroad and other transfers to households will increase from about JD 9 million in 1963 to JD 10 million in 1970.

h) Political stability, both internal and external, have been assumed for the entire period.

It should be noted that assumptions (a), (b), (c), (d) and (e) are different from, or more specific than, those underlying the earlier Five Year Program.

Preparation of the Plan

The excellent work and analysis which went into the preparation of the Five Year Program laid the groundwork for preparing the present Seven Year Program. Over the past few years studies of national income, imports, exports, manpower, the industrial survey, various health surveys, the East Ghor Economic and Social Survey and other studies have provided a great deal of necessary and relevant data.

Preparation of the present Program involved the participation of a great number of government officials, businessmen, agriculturalists, technical experts and others. The planning process involved the following steps :

First, the goals were set by the Government, and instructions issued to the Jordan Development Board and the ministries, departments, and authorities to produce a Seven Year Plan which would achieve these goals.

Second, in the ministries the Minister appointed a senior officer as Planning Officer, who, in almost all cases, was also the Budget Officer working in close conjunction with the Budget Department of the Ministry of Finance. It is essential that the Planning Officer and the Budget Officer be the same senior officer because implementation of the Plan involves a budget appropriate to the Plan and its long run goals. In many ministries the Planning Officer created small committees to assist him, and referred frequently to other senior members of his ministry.

Third, in the Jordan Development Board, each of the twelve economists involved in planning was assigned a sector in which he was to specialize. The Planning Officer of each ministry was contacted by the Jordan Development Board economist responsible for his sector, and together a working program was envolved aimed at producing a Program for that sector. In so far as possible the sectoral programs developed objectives in physical terms (output of wheat, bananas, etc. in the Agriculture sector, or number of tons of potash in the Mining sector) and then developed the requirements to achieve these objectives. These requirements included changes or additions in administration, personnel, legislation and capital investment, year by year for the seven years of the program. Other members of the ministry and the Jordan Development Board were involved in the preparation of each sectoral program as seemed desirable.

Staff meetings were held in the Board to review each sectoral program with special emphasis on the interrelationships among the programs.

Requirements imposed by each sectoral program on other sectors were considered in order to prevent bottlenecks and inconsistencies. A special summary and review was made of requirements for professional and sub-professional personnel.

Fourth, once the sectoral programs had been completed in first draft, several senior members of the Jordan Development Board, Planning Department, assembled them in aggregate form into a series of tables of National Accounts such as Tables 1 to 11 which appear in Chapter 2. Upon aggregation of the sectoral programs, it became apparent at once that substantial revisions of a number of sectoral programs were necessary along the following lines : first, a reduction of total government spending over the seven years of the Program with the burden of reduction to fall on several less immediately productive sectors; and second, a re-arrangement of investment programs in several sectors to spread the proposed extremely heavy spending of 1965 and 1966 into later years. At about the same time a series of meetings between senior officers of the Budget Department and the Jordan Development Board indicated the necessity for reduction in the planned capital spending by the Government from its own revenues in 1964/65.

Fifth, on the basis of the 1964/65 budget outlook, the Jordan Development Board specialists were then given expenditures targets (in some cases severely reduced from the original sectoral program submissions) for each year in conformity with the aggregates possible and desirable. The Ministry Planning Officers and the Development Board specialists then re-drafted the sectoral programs in the light of these requirements.

As the National Accounts tables of Chapter 2 were developed, it became evident that the most important single program necessary for the achievement of the over-all objectives is that of the Fiscal Program. This Program was written later than the sectoral programs, and based upon the National Accounts for 1964 to 1970.

Sixth, the Plan was subjected to scrutiny chapter by chapter within the Planning Department of the Jordan Development Board.

Seventh, the sectoral programs, as amended, were sent to the ministries for their comments, or in a number of cases taken by the Board economist responsible for the sector to the appropriate Minister for detailed discussion.

Eighth, each sectoral program was discussed at length in a meeting attended by the Minister concerned and/or his Undersecretary and planning officer and by senior members of the Jordan Development Board.

Ninth, after further amendment in the light of the ministry comments the Seven Year Program was drawn together and, as a balanced whole, was presented to the Board of the Jordan Development Board, for presentation to the Government of Jordan.

Achieving the Goals

In the Seven Year Program contained in this document, production objectives have been established for each sector which conform to the over-all goals of the Program. These objectives are regarded as capable of realisation if the specific action projects proposed are implemented. These projects are enumerated sector by sector in the Program and are put together to form an integrated over-all economic plan. To implement these projects will require understanding, hard work, and sacrifice on the part of all Jordanians. The Jordanian people on the basis of their experience are fully aware that there is no painless method open to this country to achieve that rate of growth which will lead eventually to the attainment of economic independence. At the same time, it is to be hoped that friendly, highly-developed countries, will appreciate and will respond to the fact that local sacrifices must be accompanied by adequate external financial assistance if this rate of economic growth is to be realized.

Taxation

It must be recognised and accepted as part of the Program that tax revenue must be increased as a proportion of national income or the objective of reducing the imbalance of trade and budget support cannot be achieved. As incomes and employment rise there will be an increase in purchasing power of consumers which tends to increase imports or domestic prices. Some of that extra purchasing power must be taxed in order to prevent a rapid rise in consumption expenditures. Furthermore, the heavy spending of the Government required for development cannot be achieved without one or more of the following : continuation of budget support at current levels, increased borrowing both at home and abroad, and increased tax revenues. Part of the Program's first objective includes such reductions in the level of budget support as Jordan may reasonably be able to sustain; and the Program involves a rate of borrowing which probably approaches the maximum attainable within the context of a very rigorous program of increasing revenue from taxation. Thus taxation is viewed as both a major source of funds so necessary for the implementation of the Program and as an instrument for maintaining an economically desirable degree of price stability.

Jordan intends to accelerate a considerable number of projects designed to reduce the trade deficit. This involves emphasising those areas of tourism, agriculture, mineral extraction, and manufacturing which are capable of increasing exports and/or reducing imports.

Tourism

Tourist expenditures in Jordan in 1963 were estimated at JD 6 million, which represents more foreign exchange than earned by any other sector of the economy, and about 30 per cent of all revenue from the export of goods and services. The number of tourists coming to Jordan and their expenditures have more than doubled in the four years 1959 to 1963, and increased by about 45 per cent between 1962 and 1963. Jordan is favoured by many sites of interest to tourists, and the capital and operating expenses involved in servicing tourists are small relative to their rate of spending. It is expected that tourism will continue to earn more foreign exchange than any other sector, and that about 38 per cent of Jordan's foreign exchange earnings in 1970 will be from this source.

The Program for Tourism calls for increasing the number of tourists from 320,000 in 1963 to 820,000 in 1970. As a result of this, expenditure by tourists is expected to be four times as great as that in 1963. To achieve this objective will require a substantial program of tourist promotion in foreign countries in order to bring more tourists to Jordan, and a major increase in local hotel accommodation and tourist facilities to meet the basic needs of tourists. It is expected that the number of first-class hotel rooms in Jordan will be doubled between June 1962 and early 1966.

While grovernment promotional programs are required to attract more tourists to Jordan, the private sector will be largely responsible for providing them with the services and attractions which will lead them to stay longer and to recommend Jordan to others.

A further increase in emphasis will be given to restoring, preserving, and marking historical sites, and to making them more easily and comfortably available to tourists. The Amman airport should be extended to accommodate long-range direct flights from Europe. The Jerusalem airport, which currently receives about two-thirds of all air passengers coming to Jordan, will be improved in the near future, both as to runway and passenger facilities.

Agriculture and Water

Agriculture has provided a good living for some Jordanians and a precarious existence for many because of recurrent droughts and the toll of soil erosion over the centuries. The 1961 Census indicated that 35 per cent of the labor force is engaged in agriculture; yet in the period 1959/61 Net Farm Income averaged only 17 per cent of Gross Domestic Product. In 1961 Jordanians consumed about JD 57 million of food in processed or unprocessed form, imported about JD 15 million and exported about JD 1.5 million. Put in a different way, in spite of the fact that over one-third of all employed Jordanians were working in agriculture, Jordan was not able to produce enough food to feed itself. Obviously the principal objective in the agricultural sector must be to increase output in order to raise living standards and reduce the balance of trade deficit.

Jordan has several serious disadvantages which must be overcome in order to increase output. First is the shortage of water, including rainfall. Operating in semi-arid conditions Jordan must put increasing emphasis on irrigation. Presently about 30 per cent of all farm production comes from irrigated agriculture; it is expected that this proportion will be increased to at least 40 per cent by 1970. The winter run-off water which can be so destructive to soil resources, roads, and other structures must be impounded in those areas where it can be economically used for irrigation. The Seven Year Program envisages dams and irrigation structures on nine wadis on the east side of the Jordan Valley north of the Dead Sea.

The East Ghor Canal project (Stage I) has provided technical personnel and farmers with experience and training in the methods of distributing and using water provided from the regular flow of the Yarmouk River. The Yarmouk Project is a natural and desirable extension of the East Ghor project to involve the impounding of winter run-off water for year-round use. The Program calls for construction of dams, irrigation structures and electric power to be initiated early in the Program.

In addition to irrigating more land, Jordanian farmers must be assisted in increasing yields per dunum. In spite of available irrigation water in the Jordan Valley, yields of a major crop such as tomatoes are no more than one-third the level of those in some other countries which depend on rainfall alone. A revolution in farming practices, and particularly in the use of fertilizer and in ensuring that no crop land or crop-days are wasted, is required to increase yields. Research and extension, along with agricultural credit will play an important role in increasing yields.

In the non-irrigated areas the amount of land devoted to olives, almonds, grapes and other drought-resistant plants will be increased drastically. Physical improvements such as terracing and sub-soiling are effective in retaining badly needed moisture. Land in the sub-marginal eastern region must be taken from wheat production (it presently produces about one crop every 3-5 years) and restored to pasture, especially of drought-resistant forage plants.

Planting forest trees can be justified from the aspect of soil conservation and water retention, but not from the aspect of economic production of wood products. Jordan must afforest vast areas which were denuded of trees in the past and are now suffering from serious erosion problems. Conservation involves selective control of grazing — an action that is economically desirable, but not always popular.

Mining

Mining has high priority because almost the entire output becomes an addition to exports, so badly needed to improve Jordan's balance of trade.

Phosphate production has increased each year and in 1963 amounted to 545,000 tons. With the proving of the El-Hasa reserves and the reduction in cost of extraction and transportation, top priority is given to developing phosphate production and sales from El-Hasa. In 1962 and 1963 considerable sales resistance was encountered, but lower costs and more vigorous sales efforts should make it possible to export two million tons per year by 1970.

Potash production from the brines of the Dead Sea has been recommended by an economic and technical feasibility study, and a plant to produce 500,000 tons per year should begin operations in 1968. Bromine and other components of the Dead Sea brines may also be extracted commercially; these will be under study during the Seven Year Program. With potash production must come the Safi-Aqaba road, and with this road will come considerable agricultural expansion in the Safi area.

Copper deposits in the Wadi Araba and the feasibility of extracting them are now under study. If the study indicates that extraction is economically feasible, considerable additional investment will be made in the appropriate facilities. The Safi-Aqaba road would then serve potash, agriculture, and copper.

Jordan is fortunate in having large deposits of high quality marble. Exports can be expanded with relatively little effort and investment.

Sulphur deposits are currently under study, and may provide additional exports.

An expanded program of exploration for mineral wealth, including oil, must be part of Jordan's economic program. Ground exploration will be carried out for locating oil deposits prior to the development of an oil industry.

Manufacturing

Manufacturing will receive additional emphasis in order to reduce Jordan's dependence upon imports. In 1961 Jordan imported JD 15 million of manufactured consumer goods, exported JD 1.8 million and consumed about JD 39.5 million. Jordan suffers from the twin disadvantages of a small local market and limited natural resources. On the other hand Jordan has readily adaptable labor, stable prices and exchange rate, and an efficient civil service relative to most nearby countries.

The Seven Year Program emphasises encouragement to local industry in order to compete with imports. To this end, three lines of attack are planned :, feasibility studies to indicate the profit potential in various industries; the training of technical and business personnel, and the provision of industrial credit. To make more technically competent personnel available to industry, the Program calls for the establishment of an Industry Advisory Service in the Ministry of National Economy. The major source of credit to new and expanding industries in Jordan has been the Industrial Development Fund. The Fund has had an excellent record in providing sound loans to business, with a very high rate of repayment, but its financial resources are so limited that it has operated largely as a revolving fund based upon the capital provided a number of years ago. The Program calls for a substantial expansion in the funds available for loaning to Jordanian business through the creation of the Industrial Development Bank.

In addition to encouraging the formation of new firms largely owned by Jordanians, the Program proposes to give encouragement to foreign capital to establish branch plants in Jordan. In some industries the "know-how" requirements and risk are such that purely domestic capital and management are unlikely to meet with success. The Program for Industry provides for encouragement of foreign capital to enter Jordanian industry under conditions that are mutually advantageous both to Jordan and the foreign capital.

Of importance to industrial development is the attitude of government toward private, quasi-public, or public ownership of industry. Economically, Jordan faces the problem that its internal market for many products is so small that the alternatives are either one or two fairly large companies of economic size or a larger number of strongly competing firms of less-than-economic size. Imports may be restricted by tariff or quota to give protection, and an internal monopoly or concession (properly circumscribed to protect consumers) may be given to reduce investors' risks.

Without being doctrinaire, the attitude of the government is, in general, to favour the private ownership of firms. When sufficient private capital is not forthcoming, the government will support sound enterprises through loans or equity participation, but only after consideration of the economic prospects of the firms. An uneconomic firm can be a detriment to development. If necessary, and only after careful study, market concessions may be granted to firms but these will usually be limited in duration to a maximum of three to five years. If the market is such that only one firm can operate efficiently, the government is prepared to impose regulations on prices and charges as with a public utility. Such regulations, however, must take into account the investors' position as well as the short-run national interest.

As a result of feasibility studies and other investigations it appears that the following industries hold distinct promise during the coming seven years : ceramics, fertilizer, pharmaceutical products, cardboard and papers, cotton and wool textiles, food canning and dairy products.

Supporting development activities which provide the manpower resources and facilities for tourism, agriculture, mining, and manufacturing must be promoted.

In *education* the heartening increase over the past decade in the number of children in school must be continued and accelerated. In 1961, only 31 per cent of the adult population were literate but 56.5 per cent of the children aged 6 to 14 were in school. The number of children in school has doubled between 1953 and 1962. The Program calls for heavy expenditures on education so that, by 1970, at least 8 out of every 10 children of school age will be in school. As to school facilities, it is apparent that Jordan must continue to rent most of its school buildings, although a sizeable program of school construction is scheduled for the later years of the Plan.

In *health* the Program calls for an increase in the number of hospital beds per 10,000 people from 19.5 beds in 1962 to 25 beds in 1970. In preventive medicine there will be a considerable expansion in the role of regional and district health centers.

In *social welfare* a modest program of expansion is proposed in order to keep pace with the social problems which accompany urbanization and industrialization.

In *labor*, an Employment Service will be established, to assist workers in finding work and employers in finding workers.

In *co-operatives* a major program of expansion is proposed for agricultural credit and marketing co-operatives, and considerable expansion in artisan and housing co-operatives.

In *housing* it is proposed to establish a Corporation to assist in the financing of house construction for those with middle incomes (especially civil servants).

In *trades and services* considerable effort will be directed toward increasing exports and improving internal efficiency through consolidation of functions of several departments of Government.

In *communications* considerable efficiency can be anticipated from the proposal for the establishment of improved accounting procedure in the operation of telecommunications and postal facilities.

In *electricity* complete integration of generation, transmission and distribution in one company is essential to gain the cost and service advantages of larger size operations. A "national grid", incorporating hydro-electric power generated from the Yarmouk and thermal power will be constructed.

In *roads*, it is proposed to construct the Safi-Aqaba highway as the main project in this field. Tourism and village roads will be improved or constructed.

In *railways*, it has already been decided to reconstruct the Ma'an-Medina route, in concert with Syria and Saudi Arabia. A line will be constructed from Aqaba to meet the Ma'an-Medina route in order to take phosphates from El-Hasa by rail to Aqaba.

In *financial institutions* great emphasis is placed upon the role of the newly-created Central Bank. After the Bank has become firmly established it should begin to implement a monetary policy appropriate to changing economic conditions. Monetary and fiscal policy must be operated in harmony throughout the Plan.

In *statistics* continued improvement is necessary to provide the data necessary for decision-makers. A Census of Agriculture will be conducted, starting in 1965.

In *local government* a major study must be undertaken of the responsibilities, financial status, source of revenues, and expenditures of the various municipal governments and villages, and of the relationship between municipal development and national development. The Jordan Development Board has already carried out preliminary exploration of this important subject.

In *government administration* a number of proposals are advanced, one of the most important of which is to strengthen and formalize the present structure and co-ordination of the Government.

Finally, in planning and in implementing the Plan the *procedures for budgeting* are extremely important. These procedures have been vastly improved by the creation of the new Budget Department in the Ministry of Finance. Starting with 1963/64 the budget of the Government was presented on a functional basis and can thus be related closely to the economic program. The Budget Department and the Jordan Development Board must continue to work closely together in the preparation of the annual Government of Jordan budget, and have already done so in the preparation of the 1964/65 budget.

In future years, there must be simultaneous discussion of the Government of Jordan budget and the revisions of the annual program [3] of the United States development grants for the forthcoming fiscal year. Thus the budget and grants can be integrated more satisfactorily than in the past wherein the grants were discussed in September and the budget several months later. Both the Development Board and the Budget Department should participate in the discussions with the United States Agency for International Development concerning development grants. The development grant project agreements should be signed almost simultaneously in February-March with the final acceptance of the Government of Jordan budget for the year commencing April 1.

These are some of the major features of the Seven Year Program. The goals of economic independence, growth, and employment are desirable from every point of view. They involve great sacrifices, but they will yield magnificent returns.

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[3] Technically, there are the annual preparation and revision of the US form "E 1".

CHAPTER 2 *THE JORDAN ECONOMY 1964-1970*

As has been indicated in Chapter 1, the achievements of the Jordan economy since 1948 have been nothing short of spectacular. Both the energy and will of the Jordanian people as a whole, and considerable amounts of external aid have been necessary to accomplish past rates of growth; neither alone could have achieved so much. With the assistance of the further aid which is required for the successful implementation of the Seven Year Program, the Jordanian economy should become significantly less dependent upon external financial aid by 1970.

It must be said straight away that such progress cannot, in the nature of things, be as swift as has been the recent overall increase in national output. The reduction in external aid which has been envisaged over the course of the seven-year period will involve a somewhat slower growth in national output, and a distinctly slower rate of growth in the satisfaction of immediate wants. While Jordanians should be considerably better off at the end of the Seven Year Program, they will have had to make sacrifices in the form of higher taxes, slower rate of growth in private consumption expenditures, and slower growth in services provided by government. In short, there is no painless way to achieve economic independence. The Plan which is summarized in the eleven tables at the end of this chapter envisages stringent self-denial, as well as sustainable reductions in the level of budget support assistance over the plan period.

Like any other developing country, Jordan will continue to need injections of investment capital for some time to come. There is nothing inherently dependent about using foreign capital provided the economy is in a position to service it and eventually to repay it. Countries buy capital just as they buy machinery. It is planned that by 1970 the country will be able to cover more of its own running costs, to pay increasingly for its imports by its foreign exchange earnings and to provide an increasing portion of the capital required for development from its own resources. The purpose of this chapter is to explain the economic processes by which these objects can be attained.

The main goals of the Plan include reduction in the trade deficit, and sustainable replacements of budget support by local funds in the form of taxation and borrowing. The Plan calls for a modest (perhaps too modest) increase in the level of recurrent government expenditure and for the necessary borrowing and taxation to come from the increased income generated by past, present and future capital investment. Thus, in one important respect, the Plan assumes an achievement similar to that of the past fifteen years i.e. a steadily increasing Gross National Product [1]. What becomes important, however, is what is done with that increase in Gross National Product. It is Jordan-owned investment financed by Jordan savings from Jordan income which must eventually produce the resources for the country to be self-supporting, and it follows that Jordan-owned investment must be at the expense of potential consumption. The Plan's proposal, in very broad terms, is to direct future increases in income as far as possible to investment.

As part of this process, the programmed increases in exports together with the expansion in the production of import substitution industries and limited increases in imports will tend to rectify the chronic deficit in the balance of trade.

The basic intention of the Plan can be explained by comparing the economy of 1963 with that of 1970. Between these two years, Gross National Product should increase by 64 per cent. Private consumption should increase by 32 per cent, of which 23 per cent is needed to meet the growth in population, leaving a 9 per cent per capita increase over the seven years. This may prove to be excessively restrictive, but it is programmed as a hoped for achievement. On the other hand, public and private investment should increase by no less than 126 per cent between 1963 and 1970. The comparison of 32 per cent increase in consumption with a 126 per cent increase in investment is a measure of the sacrifice involved in increasing total output and moving Jordan toward economic independence.

These projected changes require a very considerable departure from the pattern of the last nine or ten years during which a considerable growth in Gross National Product has been paralleled by an equally swift growth in private and particularly in public consumption, with investment both public and private increasing less rapidly.

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[1] The Gross National Product is a measure of the total income of everyone in a country in one year.

With the above outline of the broad direction in which Jordan must move if it is to achieve its goals, it is now necessary to turn to a more detailed description of the kind of economy and the levels of accomplishment which should result from the Seven Year Program. Implementation of the sectoral programs, given in detail in the following chapters, will have aggregate results which are summarized in the eleven tables of this chapter. These tables answer the questions :

Will the Seven Year Program accomplish its goals? What will the Jordanian economy be like? Are there large sacrifices involved? What will be the role of government? How much must be borrowed at home and abroad?

In other words, one must now examine the total economy and its accomplishments before turning to the individual sectoral programs which, in total, will make possible the achievement of the goals of the Program. This chapter will answer some of the general questions first, and then turn to a detailed description using the eleven National Accounts Tables which follow in this chapter.

1) *Total output in Jordan* as measured by Gross National Product, will increase by 64 per cent from an estimated JD 138 million in 1963 to JD 226 million in 1970, all in constant prices. This is the result of an average cumulative increase of 7.3 per cent per year compared with an expected increase of three per cent per year in population. The increase in Gross National Product is based on the reasonable assumption that prices will remain stable, and thus all gains are in real (not money) terms. If prices increase, Gross National Product should increase more or less correspondingly.

Details are to be found in Table 1, Rows 10 and 11.

2) *The Trade Deficit* will fall from JD 41 million in 1963 to JD 24 million in 1970. Imports of goods and services will rise by 36 per cent, from JD 61 million in 1963 to JD 83 million in 1970, whereas exports of goods and services will rise by 192 per cent, from JD 20 million in 1963 to JD 59 million in 1970. While the trade deficit will still be very large in 1970, it will then be only 11 per cent of Gross National Product compared with 30 per cent in 1963. The composition of imports and exports will be dealt with below.

Aggregate exports and imports are to be found in Table 1, Rows 7 and 9.

3) *Dependence on Foreign Aid* will be reduced and changed in composition.

The Plan assumes that budget support, which was JD 16.4 million in 1961 and JD 14 million in 1963, will decline significantly by 1970 (Table 2, Row 11). Development grants and revenues from PL 480 sales are expected to be maintained at about JD 3.5 million (Table 2, Row 21). Borrowing by the Government for capital expansion will increase abruptly from a rate of JD 1 million per year in 1961 and 1962 to JD 24.2 million in 1968, and thereafter decline to JD 14.3 million in 1970. A total of JD 105 million must be borrowed by the Government during the Seven Year Program of which JD 100 million must be obtained from abroad and JD 5 million to come from domestic sources by the sale of bonds (Table 2, Row 23). Thus the increase in borrowings (mainly from abroad) hopefully will help to offset the effects of the decline in budget support.

Comment is necessary on the reduction shown in the anticipated level of budget support between 1963 and 1970. Such a reduction has a direct effect in reducing (a) the rate of growth of Gross National Product, (b) the amount of foreign exchange available to spend on imports, and (c) government revenues.

a) As to Gross National Product, borrowing from abroad is essential if the productive projects are to be initiated which will contribute to the planned rise in GNP. If such borrowed funds are not available, then GNP cannot rise at the anticipated rate of 7.3 per cent per year.

b) As to foreign exchange, a reduction in budget support involves an equal reduction in available foreign exchange and a corresponding increase in the balance of payments deficit.

c) As to government revenues, the reduction of budget support is even more serious than to GNP. Foreign loans will normally be available only for capital formation and not for Recurring Periodic Expenditures (to use the terminology of the Budget). In addition some capital must be provided by the Government of Jordan out of its own funds in order to attract and to meet the minimum conditions of foreign loaning agencies. For some projects involving capital formation no foreign loans are possible; thus there is an irreducible minimum below which the GOJ Capital Formation funds cannot fall. Consequently, the burden of the decline in budget support will fall primarily on Recurring Periodic Expenditures.

There are two important implications of this situation : first, even if Recurring Expenditures were to remain constant, internal revenues must be increased each year by an amount equivalent to the decline in budget support; second, any increase in Recurring Expenditures must be met by a further increase of an equal amount in internal revenues.

Therefore, because of the difficulties of increasing internal revenues (discussed in Chapter 3) increases in Recurring Expenditures must be kept to a minimum.

4) *Central Government Recurring Expenditures*, including expenditures for the Jordan Arab Army and Public Security, must be restrained as much as circumstances will permit during the period of the Seven Year Program, in order to make available the capital resources required for investment in the various productive projects. It is recognised that restricting the growth of Recurring Expenditures of Government to a minimum, is neither painless nor popular. Yet it is essential if the objectives of the Seven Year Program are to be achieved.

Details of proposed expenditures by general categories are to be found in table 3.

A comment is necessary on the expenditure proposed for Defence and Justice and Police. It is recognized that the Jordan Arab Army is a body of which Jordanians are rightly proud. Their discipline and loyalty are unsurpassed. Nevertheless, in 1963, the Army and Security Forces together absorbed JD 21 million or 64 per cent of a total government revenue of JD 33 million. It is imperative to restrain Army and Security expenditures, if economic development is to be maximized. It is proposed to maintain the level of expenditure on the military throughout the period of the Plan. At the same time, it must be recognized that developments over this period may make this impracticable.

One of the biggest increases in Recurring Periodic Expenditures is proposed for Education where additional teachers must be hired, school buildings rented, and school books and supplies purchased. Recurring Expenditures on Education should almost double between 1963 and 1970. Jordan increased the number of children in government schools by 130 per cent in the ten years before 1962, yet the 1961 Census indicated that of all children 6 to 14 years of age in the Kingdom only 56.5 per cent were in school, and that 45 per cent of the population was under 15 years of age. With the large numbers of school-age children and the long-run economic, social, and political advantages to the nation which come from more widespread education, such expenditures on Education are justified.

5) *Central Government Gross Capital Formation* should total JD 131 million during the life of the program. This is an annual rate of about JD 19 million, or almost double the average of recent years.

Details of Government Capital Formation program are to be found in Table 4. It should be noted that Tables 3 and 4 attempt to follow the procedures and budget chapters of the published Ministry of Finance Budget Department, Budget Law. To comment in detail on Table 4 would be superfluous, as the detailed information is contained in the various sectoral programs. However, it should be noted that the Yarmouk project will not be completed by 1970, and that no substantial increase in production from that project is included in the Gross National Product figures of Table 1.

6) *Central Government Domestic Revenues* must be increased from about JD 19 million in 1965 to JD 35 million in 1970 as a necessary part of the process of moving toward economic independence. Increasing the government domestic revenue is necessary : (a) to offset the reduction in budget support, (b) to channel some of the increased purchasing power of the private sector into investment as well as to prevent an undue rise in imports of consumer goods with a consequent worsening of the trade deficit, and (c) to permit necessary increases in Recurring Periodic Expenditures including a salary increase spread over 1965 and 1966.

Details of the required fiscal program are given in Chapter 3. Revenue targets are given in Table 2, Rows 1 to 10 (Rows 1 to 8 follow present categories in the GOJ budget). Direct taxes (mostly income and property) must yield more than two times the revenue of 1963; some of the growth in revenue will come about automatically with the growth in incomes, but much of it will depend upon better collections and higher rates. This increase in collections is clearly as much as the economy can stand without dire effects on incentives and so the remainder of the required increases in taxation must be in the form of indirect taxes. It is proposed that a turn-over or sales tax be introduced in 1967 on non-basic commodities sold at the retail level and on sales of real estate and cars; it should yield about JD 0.2 million in 1967 increasing to JD 1.0 million in 1970.

7) *Local Governments* are expected to undertake a large volume of expenditure on water projects in the early years of the Plan; loans are already available for Amman, Ain Samya, Nablus and Irbid water projects. Table 11, Row 2 (i) indicates a stabilization of expenditure on municipal

water projects at about JD 150,000 in 1969 and 1970, down from JD 500,000 in 1964. Other capital expenditures of municipalities are expected to increase from JD 0.7 million in 1964 to JD 2.1 million in 1970.

As recurring and capital expenditures of local governments are significant to the economy it is essential that a thorough study of local governments — their responsibilities, financial needs, and revenues — should be undertaken within the coming year by the Ministry of Interior and the Jordan Development Board, with the assistance of a foreign expert.

8) *Private Gross Capital Formation* should total JD 129 million during the period of the Seven Year Program rising from an estimated JD 11.3 million in 1963 to JD 24.1 million in 1970, (see Table 1, Row 4). Such capital formation includes a major investment program in hotels (JD 9.7 million over the seven years), potash (JD 19.5 million), agriculture (JD 16.1 million), manufacturing (JD 8.2 million) and continued heavy investment in transportation equipment and housing. Investment required in the major categories is presented in Table 5 and given in greater detail in the sectoral programs.

Obviously, it was impossible to anticipate in 1963 all of the investment plans and opportunities, direct or induced, which will be generated by a free and volatile private sector in the latter years of the program. An aggregate estimate of induced and presently unplanned investment appears in Table 5, Row 15. It should be noted that private investment over the period of the program is almost equal to public investment. In 1970 private investment of JD 25 million will be 61 per cent greater than Central Government investment; in 1963 private investment exceeded Government investment by 82 per cent. With an increase in Gross National Product of JD 88 million between 1963 and 1970, there would be an increase of JD 23.6 million in all forms of investment by the public and private sectors or a marginal propensity to invest of 27 per cent.

9) *Private Savings* are to be found in Table 10, Row 11; they should rise from JD 2.7 million in 1963 to JD 37.5 million in 1970. Gross funds available for investment should rise from JD 4.0 million in 1963 to JD 36 million in 1970 (Table 10, Row 15). Total funds available for private investment in the years 1964/70 would be JD 200.6 million[2] over the seven years of the program.

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[2] This figure is about JD 71.4 million in excess of programmed gross private investment due to the fact that the goal of rigid monetary stability has not been fully embraced.

10) *Private Consumption Expenditure* must be restrained to an increase of no more than four per cent per year over the period. This will allow a one per cent per year increase in average standard of living, considering the expected three per cent per year increase in population. Any considerable increase in private consumption expenditures above this four per cent annual increase would have two serious repercussions : (a) increase in imports, and (b) less capital available for investment in Jordanian productive enterprises. While imports might be controlled by license restrictions, any heavy increases in consumer spending will merely raise domestic prices. Restraining of consumption expenditures must be accomplished through heavier taxation of incomes and commodities to reduce the amount of income available for spending on consumer goods (see Chapter 3 — Fiscal Program), and through encouragement to save and invest (see Chapter 18 — Financial Institutions).

Projected private expenditures on consumer goods are to be found in Table 1, Row 1.

11) *Sale of Government Bonds*. Jordan is almost unique in not having issued Government bonds for purchase by the private sector. A modest national debt owed to citizens of Jordan should not be regarded as undesirable; in fact it is much more desirable than having foreign debts of a similar size. Currently, the Government has incurred debts totalling JD 25 million [3]. This could be considered a small figure relative to Gross National Product except for three facts : (a) Jordan's crucial dependence on foreign aid; (b) Jordan's highly adverse balance of trade; and (c) the fact that all of the national debt is owed to foreigners.

Issuing of bonds is proposed for 1966 and subsequent years, with a total sale of JD 5.1 million. Such sales have important advantages : (a) attracting from the private sector JD 5.1 million which might otherwise have been spent on consumer goods, especially imports; (b) providing funds for Government investment; and (c) creating a small "money market" so essential to the implementation of monetary policy by the Central Bank.

12) *Employment*. The Census of November 1961 indicated that, of an "economically active" population of 390,000 only 27,300 or seven per cent were "seeking work". However, the same Census indicated that there

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[3] Additional loans to Jordan have been approved, but not yet drawn. This excludes the recent Kuwait loan of JD 5 million.

were 68,000 males aged 15 to 64 who were "economically inactive" and not in school although they were not classified as "seeking work". The proportion of those seeking work is much lower than estimates of unemployment made earlier; these estimates often reached 25-33 per cent of the potential labor force. No doubt there is a great deal of under-employment, partial employment and chronic unemployment as Jordan embarks on the Seven Year Program. How is unemployment likely to be affected by the Program?

The Seven Year Program indicates that G.N.P. should increase at the cumulative rate of more than seven per cent per year. If there were no change in productivity per worker, employment should increase at the same rate. Although information on the subject is sketchy, it appears that productivity may be increasing at the rate of 1 to 1.5 per cent per year. If one accepts the estimate of 1.5 per cent productivity increase, then a rate of about 5½ per cent increase in employment will be necessary to produce a total of seven per cent increase in G.N.P. The number of people of employable age is increasing at the rate of about four per cent per year. Thus the seven per cent of the labor force who are "seeking work" should be reduced by about one and a half percentage point per year. Theoretically, then, after seven years, or in 1970, there should be no unemployment. However, it is logical to expect that with large numbers of people in subsistence agriculture, and considerable under-employment, the labor force may increase at a rate higher than the rate of increase in number of people of employable age, and the number "seeking work" may continue at a magnitude similar to the present. Nevertheless, employment should rise by approximately five per cent per year or about 20-24,000 jobs per year during the course of the Seven Year Program.

It is anticipated that the present large number of Jordanians employed in other countries will continue to increase.

13) *International Transactions*. Exports of goods and services (Table 6) are programmed to increase from JD 20 million in 1963 to JD 59 million in 1970, or an increase of 192 per cent in the seven years of the Plan. The bulk of this increase is projected for : agriculture — JD 3.6 million; phosphate — JD 5.6 million; Potash — JD 5.4 million; manufactures and all other goods — JD 2.8 million; and above all travel (tourism) JD 20.5 million. Other services would account for the balance. There is a clear concentration on sectors which require the lowest proportional injection of imported goods.

Imports of goods and services (Table 7) are limited to an increase of JD 21.8 million between 1963 and 1970 divided as follows : private consumption goods — JD 2.8 million; Government consumption and intermediate goods — JD 2.1 million; capital formation by private and public sectors will increase imports by JD 10.9 million. Travel, which embraces all non-government financial movements abroad, including expenditures of those on training programs and the "cost" side of the considerable remittances from Jordanian residents working abroad, is expected to rise by JD 1.8 million. Other services would account for the balance.

The essence of this import program lies in the very small increases allowed for consumption, which must have a very much lower priority than investment, the key of the whole program.

The summary of International Transactions in Table 8 draws the two sides, along with the other constituents involved.

As previously stated, the trade deficit (Table 8, Row 7 minus Row 1) will decline from JD 41 million in 1963 to JD 24 million in 1970. But these bare figures, when examined from the point of view solely of meeting current obligations, are even more satisfactory. In 1963 exports of goods and services at JD 20 million met only 33 per cent of the import bill. If the economy reaches the goals of the plan, in 1970 the ratio will be 71 per cent. Adding in net factor income from abroad and current transfers to households (Rows 2 and 3) to find the amount of earned foreign exchange which Jordanians can produce to meet Jordan's import bill, the change from 1963 to 1970 is from 53 per cent to 89 per cent. Moving toward economic independence by paying for approximately nine tenths of all imports instead of one-half of them would be an achievement no less spectacular, and much more satisfying, than was that of doubling national income during the last seven years.

NATIONAL ACCOUNTS TABLES

There is a possible source of confusion between calendar years and fiscal years in the eleven tables which follow. Because it is desirable to maintain strict comparability between the government accounts (operated on a fiscal year April 1 to March 31 basis) and the Seven Year Program. Tables 2, 3, 4, 9 and 11 are on a fiscal year basis. The year quoted means the year in which the fiscal year commences (e.g. "1963" means "Fiscal Year 1963-64").

Because the export and import statistics and the National Accounts produced by the Department of Statistics are on a calendar year basis, and again, to provide comparability, Tables 1, 5, 6, 7, 8, and 10 are on a calendar year basis. It would have been possible to adjust either the fiscal or the calendar years to one common "year" but, after careful consideration it was felt that to do so would result in more disadvantages in the form of confusion and lack of understanding than in gains in the form of precision. Consequently the following is the case :

Tables 2, 3, 4, 9 and 11 are fiscal years.

Tables 1, 5, 6, 7, 8, and 10 are calendar years except for data which are derived from those using fiscal years.

Detailed explanations of the eleven tables follow :

Table 1

Table 1 provides a summary of the main categories of expenditure in the economy and indicates (in Row 10) the Expenditure on Gross National Product.

Table 2

Table 2, Rows 1 to 8 follow the categories given in the Government of Jordan Budget. These are not as clear-cut as is desirable because some "Taxes" (Row 2) such as the National Guard Tax are an amalgam of all kinds of customs, licenses and additions to existing taxes.

Row 9 is a proposed new turnover tax which would apply to land and fixed property transfers, sale of used automobiles, trucks and buses, and certain large luxury purchases such as refrigerators and similar goods. It would not apply to food or necessities.

Row 16 indicates the change in available cash balances of the government. These will continue to fall consistently after 1967 to help finance capital expenditures of the government. However, it is anticipated that a minimum level of cash balance of JD 3 million will be available.

Row 15 is an essential part of the total capital investment program because, though small, most of the borrowed capital is made available only if some proportion of locally-generated capital is provided.

Row 23, Bond Sales to the private sector, marks the beginning of a long-term securities market, to be found in almost every developed country. Such a market will make more effective the operations of the new Central

Bank in influencing the money supply and in implementing government economic policy.

While Gross Foreign Borrowings (Row 24) are large, they are not unrealistic in relation to the economy as a whole and volume of loanable funds available in the world market.

Table 3

Table 3 is almost self-explanatory. It uses the budget chapters as explained in the footnotes, and adopts the classifications (Row 1 to 7) of the Department of Statistics' publication "The National Accounts, 1959 to 1963".

It is proposed that post, telephones and telegraphs have separate accounts in order that revenues from each of the services can be readily identified, and made available for the operating and capital expenditure of that service.

Table 4

Table 4 refers to expenditures on Major Capital Acquisitions following the pattern established in the Budget document; wherever possible, budget chapters are given which are based on that Budget. Data for the years 1961 and 1962 are not included because the data for those years were not strictly comparable with the classifications used in Table 4. Table 4 refers to *Gross* Capital Investment — in other words it makes no deduction for depreciation on existing fixed assets of government.

Row 14 on National Economy includes JD 40,000 for the "Standards Bureau".

Rows 18 and 19 may have some exchange of funds because of the possibility of using some of the Hejaz line for the route to Aqaba.

Row 21 includes some funds in 1965 and succeeding years for the payments to landowners in Stage I who have sold land to the East Ghor Canal Authority.

Row 23 refers to the Yarmouk River project currently under intensive study by engineering consultants. Anticipated expenditures during 1964/70 are based on consultants' estimates. These would involve total investment of JD 30 million in dams and irrigation structures.

Row 25, the Phosphate Project, is included in Table 4 (Public Investment) in spite of the fact that the existing company is a joint-stock company. The funds involved in the development of the El-Hasa mines are so substantial that government participation is likely to be considerably greater than that of the private sector.

Row 26, Port of Aqaba, follows the general lines proposed by the consulting firm; it embraces provision for storage and rapid loading of phosphate and potash, and short term storage for wheat imports, as well as improved unloading.

Row 27, the National Electricity Grid involves a major program of centralized electricity generation together with a national grid for transmission among the five major consuming centers — Zerka, Amman, Jerusalem, Nablus and Irbid. Local distribution appears in part of the private sector (Table 5 Row 7). It is proposed that one national company be created for generation, transmission and distribution with government and private participation.

For 1963, 1964 and 1965 there are breakdowns between Government of Jordan and foreign sources of capital based on current knowledge of foreign loans and grants. United Nations experts and programs are not included. It proved too hazardous to predict the breakdown between Government and foreign sources for later years. In general the Government will have to use GOJ funds to fill in the gaps which cannot be covered by foreign loans and grants.

Table 5

Table 5 refers to investment by the private sector in new residential construction, new non-residential construction, new machines and equipment and changes in inventories. As with Table 4, the figures presented are gross — i.e. without deductions having been made for depreciation on existing assets.

Row 1, Agriculture, includes investment in new buildings, irrigation facilities, livestock, and machinery owned by farmers. An estimated 70 to 80 per cent of this new investment will be financed by the Agricultural Credit Corporation through its medium and long-term loans.

Row 3, Potash, refers to the major investment program of the Arab Potash Company, with government assistance. This investment is required in order to produce 500,000 tons of potash per year.

Row 5, Industry, will be able to receive some credit and technical and managerial advice from the proposed Industrial Development Bank and the Industrial Advisory Service.

Row 6, Hotels, is scheduled at a rate to give about 70 per cent occupancy. Any lower rate of occupancy combined with the number of tourists expected will involve greater annual expenditures.

Row 8, Trades and Services, is a heterogeneous mixture of wholesaling, retailing, importing, exporting, professional services, restaurants, amusements and so forth.

Row 9, Housing, seems to involve a very high proportion of private investment funds (28 per cent in 1963 and 27 per cent in 1970). The problem really lies in the kind of houses built; there is no doubt that more low-rental accommodation is an urgent social necessity, but much of the housing presently under construction is of luxury or semi-luxury type. A much smaller total expenditure on housing will be supported by the government in the form of a middle-income housing corporation, and through housing co-operatives.

Row 10, Transportation equipment, excludes railway rolling stock, but includes trucks, buses, and cars used for commercial purposes.

Row 11, Private Hospitals, is based on the assumption of very modest growth of such hospitals.

Row 12, refers to private schools and the Jordan University.

Row 15, (Unallocated investment) is necessary for the sake of realism. Its inclusion results from the fact that it is impossible to foresee all of the investment in its various forms which will be made over the years. The time is such that one can Plan and anticipate better for the nearer years than for 6 or 7 years hence. Investment induced by other planned developments, unforeseen investment, and possible investment are all part of Unallocated Investment.

As income and business activity expand, additional stocks of raw materials, finished products, and consumer goods will grow more or less proportionally. These increases have been included in Row 15.

Table 6

Table 6 indicates a remarkable growth in the exports of goods and services.

Row 1.1 includes exports and re-exports valued F.O.B. Row (1.1.1) includes only unprocessed food products such as fresh fruits and vegetables; olive oil, fruit juice and other processed foods are included in Row (1.1.4). Row (1.1.2) assumes a steady growth to approximately 2,000,000 metric tons of phosphate per year.

Row (1.2). Tourism, provides the greatest potential export — a potential which has been barely explored to date. It is anticipated that Tourism will amount to about 45 per cent of total exports in 1970 compared with about 29 per cent in 1963.

Row (1.3) includes receipts of foreign diplomatic missions in Jordan, net profits of the Jordan Central Bank, interest on banks' balances abroad, and imports and receipts by religious institutions, UK Government pension payments to former Palestine Government officials residing in Jordan, miscellaneous commercial transfer receipts, and local expenditures by UNRWA. The foreign goods imported by UNRWA are included in Table 8, Row 3.

Table 7

While imports must increase over the period of the Plan, the main increase must come in capital goods rather than consumption goods. Row 1.3 Intermediate goods, refers to raw materials and semi-processed goods to be employed in production (fertilizers in agriculture or lumber in industry are examples) and imports for consumption by Government.

Row 2, Travel, includes medical, education, and other travel abroad.

Table 8

Table 8 summarizes the international transactions position of the economy. Row 11 for 1962 includes the Oil Tapline retroactive payment. Row 13 indicates the heavy requirement for foreign exchange in the early years of the Plan.

Table 9

Row 1, Agricultural Credit Corporation, presupposes that additional loans will be forthcoming from the International Development Association to the Government of Jordan for re-loaning to the Agricultural Credit Corporation. Funds for 1963, 1964, and 1965 are already available from a loan made by IDA in 1963.

Row 3, East Ghor Canal Authority, requires funds to meet its obligations to land owners who have sold land to the Authority for resale to land purchasers.

Row 4, Industrial Development Bank is for gross loans to the Bank for re-loaning to the private sector for industry and hotels.

Table 10

Table 10 draws together data from a number of other tables to indicate the private savings available and the funds available for private investment. A comparison of Table 10, Row 15 and Table 5, Row 16 indicates that there is some discrepancy between the funds available for investment and the amounts likely to be invested over the seven years of the Plan. The funds available for investment exceed actual investment by the private sector by a modest amount. Such surpluses may be hoarded, or invested by Jordanians in other countries, or be used to build up liquid balances at home or abroad. It is desirable that the amount of such foreign investment will be small as it is in the best interest of Jordan that almost all available capital be invested locally.

Table 11

Table 11 is probably the least satisfactory table of the series because of the lack of a breakdown between sources of revenues and types of expenditures by the local governments. Of high priority in the Program is a complete review and study of Local Government responsibilities, revenues, and expenditures.

TABLE 1 Expenditure on Gross National Product at Market Prices (JD Million)

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
1. Private consumption expenditure	102.8	102.4	116.3	120.9	125.8	130.8	136.1	141.5	147.2	153.1
2. Central government recurring expenditure	28.0	29.9	33.2	34.6	35.8	36.7	37.7	38.7	39.8	41.0
3. Central government gross capital formation	4.9	7.6	6.2	8.6	13.1	21.8	29.8	22.6	19.6	15.3
4. Private sector gross capital formation	11.4	10.0	11.3	12.1	13.9	15.0	17.6	21.0	24.9	24.7
5. Local governments expenditures (recurring and capital)	1.3	1.5	2.8	2.9	4.1	4.2	4.2	4.4	4.4	4.6
6. Gross domestic expenditures (rows 1 to 5)	148.4	151.4	169.8	179.1	192.7	208.5	225.4	228.2	235.9	238.7
7. Exports of goods and services and net factor income from abroad	24.0	31.0	28.8	36.4	38.0	42.2	47.0	53.5	61.6	70.2
8. Expenditure of gross domestic product and exports (row 6 + 7)	172.4	182.4	198.6	215.5	230.7	250.7	272.4	281.7	297.5	308.9
9. Imports of goods and services	46.5	51.8	61.1	57.2	62.4	69.4	76.5	77.6	81.2	82.9
10. Expenditure on gross national product (row 8 — 9)	125.9	130.6	137.5	158.3	168.3	181.3	195.9	204.1	216.3	226.0
11. Increase in G.N.P. over preceding year (%)	—	3.7	5.3	15.1	6.3	7.7	8.1	4.2	6.0	4.5

Notes on Above

Row 1. Increase of 4 per cent per annum based on 1963 level, providing for a 3 per cent increase in population and 1 per cent increase in standard of living.
2. Table 3, Row 8. Years 1961 and 1962 calculated on a different basis from later years and may be under-reported.
3. Table 4, Row 30. In 1963 an additional JD 3.2 million is included for the purchase of transportation equipment.
4. Table 5, Row 16. Includes changes in stocks.
5. Table 11, Row 3
7. Table 6, Row 3
9. Table 7, Row 4
10. Strictly speaking, this row represents Gross National Expenditures.

TABLE 2 Central Government Revenues and Expenditures

(JD Million)

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
1. Customs and Excise	6.0	6.4	7.2	8.4	10.0	10.5	11.0	11.5	12.2	12.8
2. Taxes	2.5	3.1	3.4	3.4	4.8	5.3	5.9	6.3	6.9	7.5
3. Licences	0.9	0.9	1.0	1.0	1.6	1.7	1.8	1.9	2.0	2.1
4. Fees	2.1	2.3	2.6	2.7	3.0	3.2	3.4	3.6	3.8	4.0
5. Post, Telephone and Telegraphs	0.8	1.0	1.1	1.2	2.2	2.4	2.6	2.8	3.0	3.2
6. State Domain Revenues	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
7. Interest and Profits	1.1	1.2	1.2	1.3	1.7	1.8	1.9	2.0	2.1	2.2
8. (a) Miscellaneous Income (recurrent)	1.2	2.4	2.8	2.6	2.2	2.2	2.2	2.3	2.3	2.4
(b) Miscellaneous Income (non-recurrent)	—	3.7	—	2.0	1.4	0.9	0.5	—	—	—
9. Turnover or Sales Tax	—	—	—	—	—	—	0.2	0.4	0.7	1.0
10. Total Domestic Revenues (Rows 1 to 9)	14.7	21.1	19.4	22.8	26.9	28.1	29.6	30.9	33.1	35.3
11. Budget Support (U.S. and U.K.)	16.4	14.7	14.0	18.6	12.8	12.0	11.0	10.0	8.0	6.0
12. Total Current Revenues (Row 10 + 11)	31.1	35.8	33.4	41.4	39.7	40.1	40.6	40.9	41.1	41.3
13. Recurring Periodic Expenditures (Table 3, Row 8)	28.0	29.9	33.2	34.6	35.8	36.7	37.7	38.7	39.8	41.0
14. Surplus (+) or Deficit (—) on Current Account (Row 12-13)	+ 3.1	+ 5.9	+ 0.2	+ 6.8	+ 3.9	+ 3.4	+ 2.9	+ 2.2	+ 1.3	+ 0.3
15. GOJ-financed Capital Expenditures	2.5	4.5	2.9	4.9	5.7	4.4	3.9	2.8	1.8	0.8
16. Increase (+) or Decrease (-) in Available Cash Balance (Row 14-15)	+ 0.6	+ 1.4	— 2.7	+ 1.9	— 1.8	— 1.0	— 1.0	— 0.6	— 0.5	— 0.5
17. Central Government Gross Capital Formation (Table 4, Row 30)	4.9	7.6	6.2	8.6	13.1	21.8	29.8	22.6	19.6	15.3
18. Net loans to Private Sector and Local Governments (Table 9, Row 8)	1.0	1.7	0.6	1.2	3.0	3.3	4.8	6.4	2.9	0.7
19. Repayment of Foreign Loans	—	—	0.1	0.1	0.5	0.8	1.2	2.4	2.7	4.6
20. Capital Funds Required (Row 16+17+18+19)	6.5	10.7	4.2	11.8	14.8	24.9	34.8	30.8	24.7	20.1
21. Surplus on Current Account (Row 14 above)	3.1	5.9	0.2	6.8	3.9	3.4	2.9	2.2	1.3	0.3
22. Development Grants plus Revenue from PL 480 sales (Table 8, Row 5)	2.9	2.8	3.7	3.3	6.6	8.4	6.8	3.5	3.5	3.5
23. Sales of Short and Long Term Bonds to Private Sector	—	—	—	—	—	0.2	0.5	0.9	1.5	2.0
24. Foreign Borrowing (Row 20-21-22-23)	0.5	2.0	0.3	1.7	4.3	12.9	24.6	24.2	18.4	14.3

Notes on Above

Row 1. In 1961, 1962, 1963 and 1964 Customs and Excise were respectively 14.4%, 14.3%, 13.4%, and 17.0% of imports of goods; 1965 taken as 18.6%, 1966 as 17.6%, 1967 as 16.7%, 1968 as 17.4%, 1969 as 17.8%, and 1970 as 18.4%.

2. In 1961, 1962, 1963 and 1964 taxes were 2.0%, 2.4%, 2.5%, and 2.1% of G.N.P. 1965 was taken as 2.8%, 1966 as 2.9%, 1967 as 3.0%, 1968 as 3.1%, 1969 as 3.2%, and 1970 as 3.3%.

3. Licenses were JD 1.0 million in 1963 and 1964; estimated at JD 1.6 million in 1965, thereafter rising by JD 100,000 per year.

4. Fees were JD 2.6 million in 1963 and JD 2.7 million in 1964; taken as JD 3.0 million in 1965, thereafter rising by JD 200,000 per year.

5. Increase in 1965 based on about 45% rate increases in telephone charges; thereafter JD 200,000 annual increase is postulated.

6. Constant at JD 100,000 throughout

8. (a) Mostly oil tapline (regular) revenue and Government pension revenue.
(b) In 1962 non-recurrent oil tapline payment.

9. Beginning in 1967 and reaching 0.65% of private consumption by 1970.

10. Includes Kuwaiti loan for 1964 amounting JD 5,000,000.

TABLE 3 Central Government Recurring Expenditures

(JD Million)

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
1. General Administration	4.1	4.6	5.5	6.1	6.7	7.0	7.3	7.6	7.9	8.2
2. Defence	16.4	16.8	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6
3. Justice and Police	2.5	2.5	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
4. Education	2.8	3.1	3.4	3.7	4.0	4.3	4.7	5.2	5.8	6.4
5. Health and Welfare	1.3	1.4	1.5	1.5	1.6	1.7	1.8	1.9	1.9	2.0
6. Communication	0.5	0.5	0.5	0.7	0.8	0.8	0.9	0.9	1.0	1.1
7. Other services	0.4	1.0	1.0	1.1	1.4	1.6	1.7	1.8	1.9	2.0
8. Total Central Government	28.0	29.9	33.2	34.4	35.8	36.7	37.7	38.7	39.8	41.0

Notes on Above

Row 1. The budget chapters contained in the rows above are consistent with those developed in the "National Accounts 1959-63". Data for 1961, 1962 and 1963 are actuals; 1964 data are revised estimates

Includes following chapter headings in 1965-66 GOJ budget; 1/2, 3/1, 3/2, 4/1, 4/3, 4/4, 10, 11/1, 11/2, 11/3, 13, 13/2, 13/3, 13/4, 13/5, 14, 15, 17, 18, 19, 20/1, 24.

2. Chapters 5/1, 5/2
3. Chapters 4/2, 6
4. Chapter 7
5. Chapters 8/1, 8/2, 8/3, 16
6. Chapter 12 Telephone, Telegraph and Postal Services only.
7. Chapters 3/3, 9/1, 9/2, 9/3, 9/4, 9/5, 9/6, 20/2, 20/3, 21, 22, 23, 25/1, 25/2

TABLE 4 Central Government Gross Capital Formation (JD 000's)

	1963		1964		1965							Total
	GOJ	Foreign	GOJ	Foreign	GOJ	Foreign	1966	1967	1968	1969	1970	1964-70
1. Ministry of Information	162	—	64	—	113	—	35	30	17	18	18	295
2. Tourism Authority	347	50	50	187	98	224	218	196	210	225	240	1648
3. Antiquities Department	6	40	45	—	39	—	169	229	145	132	93	852
4. Education	74	142	41	174	132	—	845	870	861	600	800	4328
5. Social Affairs and Labor	5	—	9	69	13	2	34	4	6	9	22	168
6. Ministry of Agriculture	27	90	8	26	40	—	124	81	72	16	6	373
7. Forestry Department	—	60	4	36	3	162	212	210	208	216	242	1293
8. Veterinary Department	2	4	4	—	4	77	27	34	25	11	11	193
9. Agricultural Extension Department	—	10	—	240	2	91	134	100	104	102	102	875
10. Agricultural Research Department	2	21	—	33	4	10	34	12	11	7	8	119
11. Agricultural Marketing	—	—	8	—	4	131	168	131	80	80	39	641
12. Public Works — Roads	493	470	341	322	897	1158	1900	2200	2000	1450	500	10768
13. Public Works — Government Buildings	81	—	38	—	160	—	150	150	200	300	430	1428
14. National Economy (Including Statistics)	—	—	14	—	35	—	10	10	20	20	20	129
15. Post, Telephone and Telegraph	438	—	442	—	738	—	1655	1655	440	440	440	5810
16. Civil Aviation and Meteorology	43	—	56	—	96	70	630	647	1124	1841	1076	5540
17. Ministry of Finance	693	—	3135	—	1136	—	1000	800	600	500	400	7571
18. Railway — Ma'an to Medina	—	—	300	—	300	—	250	250	250	250	250	1850
19. Railway — Ma'an to Aqaba	—	—	—	11	—	60	2300	4150	4050	2150	650	13371
20. Health	120	54	24	70	232	20	155	368	409	477	442	2197
21. East Ghor Canal Authority	116	566	311	627	250	—	—	—	—	—	—	1188
22. Central Water Authority (including Wadi Shu'eib & Kufrein & excluding municipal water projects)	216	570	112	1279	352	1448	2060	3860	3740	3290	3265	19406
23. Yarmouk (including side wadi dams)	—	213	—	300	—	700	5000	9248	5000	5604	4400	30252
24. Mining Exploration	—	57	—	25	105	—	300	300	300	250	250	1530
25. Phosphate	—	585	—	59	—	1500	1000	500	—	—	—	3059
26. Port of Aqaba	—	478	—	173	—	941	531	655	214	500	389	3403
27. Electricity (including Yarmouk)	—	—	—	—	—	805	1513	1616	1048	411	310	5703
28. Village Development (including housing)	—	—	—	—	916	—	400	450	500	700	900	3866
29. Potash	—	—	—	—	—	—	1000	1000	1000	—	—	3000
30. Total	2825	3410	5011	3631	5199	7399	21854	29756	22634	19599	15303	130856

Notes on Above

Data exclude loans to the I.D.F., ACC and to Municipalities. These transfers amounted to JD 330,000 in 1964.

Row 3. GOJ 1963 budget includes JD 290,000 for New York World's Fair. Succeeding figures not strictly capital formation.
8. Does not include UN Special Fund project.
10. Years 1963-1965 include USAID East Ghor Rural Development Project.
12. UN Special Fund project.
15. Included in row 3 the sum of JD 290,000 for the fiscal year 1963-64.
18. IMF contribution (JD 155,000 in 1963).
19. Jordan share of reconstruction of Ma'an — Medina Line. In 1963, JD 800,000 were available from previous GOJ allocations.
20. Includes rolling stock for entire Jordan railway.
23. Excluding Municipal water projects.

TABLE 5 Private Sector — Gross Capital Formation (JD 000's)

	1963	1964	1965	1966	1967	1968	1969	1970	Total 1964-70
1. Agriculture	1,450	1,750	1,960	2,150	2,360	2,410	2,600	2,830	16,060
2. Fishing	—	60	15	50	15	60	—	10	210
3. Potash	—	—	200	200	2,300	4,700	6,800	5,300	19,500
4. Marble	35	10	10	10	15	15	15	20	95
5. Industry	1,330	1,080	1,720	980	1,070	1,310	850	1,140	8,150
6. Hotels	1,050	900	1,100	1,700	1,600	1,600	1,600	1,200	9,700
7. Electricity	250	270	290	410	430	430	500	500	2,830
8. Trades and Services	825	870	910	955	1,005	1,055	1,110	1,163	7,070
9. Housing	3,640	3,950	4,080	4,225	4,365	4,520	5,300	5,280	31,720
10. Transportation	1,500	1,200	1,350	1,650	1,800	1,950	2,100	2,250	12,300
11. Hospitals	40	85	100	125	125	100	100	100	735
12. Schools, University	65	125	255	255	310	360	410	410	2,125
13. Oil Exploration	—	150	400	500	500	500	500	500	3,050
14. Sport Stadium	50	400	350	250	—	—	—	—	1,000
15. Unallocated Investment plus Increase in Stocks	1,075	1,200	1,200	1,500	1,750	2,000	3,000	4,000	14,650
16. Total	11,310	12,050	13,940	14,960	17,645	21,010	24,885	24,705	129,195

Notes on Above

Row 1. Includes ACC loans, privately financed investment, growth in inventories of food and animals.
6. Building and machinery only; excludes working capital and land.
8. For Government investment see Table 4, Row 29.
9. Increase of 5% per annum based on *National Accounts* 1959-63.
10. Increase of 4% per annum based on *National Accounts* 1959-63.
11. Includes all trucks, buses and taxis (one-third of car imports assumed to be taxis for private sector). Present over-capacity accounts for drop between 1963 and 1964. The introduction of the railway will reduce demand for trucks.
15. Includes total cost of project although some funds are provided from public sector (not inlcuded in GOJ budget).

TABLE 6 Exports of Goods and Services and Net Factor Income (JD Million)

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
1. Exports of goods and services	16.95	19.08	20.26	24.18	28.21	32.13	36.71	42.98	50.85	59.18
1.1 Exports of goods	5.27	5.92	6.56	8.87	10.50	11.90	13.44	16.07	19.62	23.97
1.1.1. Agriculture (unprocessed)	2.15	2.85	3.46	4.41	4.80	5.25	5.65	6.10	6.60	7.10
1.1.2. Phosphate	1.55	1.45	1.40	2.48	3.25	4.00	5.00	6.00	6.50	7.00
1.1.3. Potash	—	—	—	—	—	—	—	1.00	2.68	5.36
1.1.4. Manufacture and others	1.57	1.62	1.70	1.98	2.45	2.65	2.79	2.97	3.84	4.51
1.2 Travel	4.34	5.05	6.00	7.70	9.46	11.87	14.79	18.31	22.56	26.47
1.3 Other Services	7.34	8.11	7.70	7.61	8.25	8.36	8.48	8.60	8.67	8.74
1.3.1. Government	1.06	1.30	1.19	1.11	1.65	1.70	1.75	1.80	1.80	1.80
1.3.2. Freight and Insurance	0.09	0.47	0.24	0.24	0.30	0.35	0.40	0.45	0.50	0.55
1.3.3. Miscellaneous (including UNRWA cash, UN agencies, Charitable institutions)	6.19	6.34	6.27	6.26	6.30	6.31	6.33	6.35	6.37	6.39
2. Net Factor Income	7.00	11.93	8.56	12.22	9.80	10.05	10.30	10.55	10.80	11.05
3. Total exports of goods and services plus net factor income (1 + 2)	23.95	31.01	28.82	36.40	38.01	42.18	47.01	53.53	61.65	70.23

Notes on Above

Data for 1961, 1962 and 1963 are actual, and preliminary for 1964.

Row 1.1.1. Includes tariff chapters 1, 4 to 10, 12, 14, 41, 53, 55 in statistical year book 1962, table 116.
1.1.2. Tariff chapters 25/10 Table 117; 1970 based on estimate of exports of 2 million tons at JD 3.5 per ton.
1.1.3. 1970 based on estimate of 500,000 tons at JD 10.7 per ton.
1.1.4. Includes all other tariff chapters other than those contained in rows 1.1.1. and 1.1.2.
2. Net Factor Income includes remittances of Jordanians abroad, interest and dividends and oil companies remittances. 1962 figure includes about JD 3.6 million non-recurring Tapline payment.

TABLE 7 Imports of Goods and Services

(JD Million)

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
1. Imports of Goods	41.7	44.9	53.7	49.4	53.7	59.6	65.8	66.0	68.7	69.5
1.1 Private Consumption	21.2	23.1	26.2	26.6	27.0	27.5	27.9	28.3	28.7	29.0
1.2 Gross Capital Formation, Private, Central & Local Governments	7.5	8.0	8.1	9.9	13.2	17.6	22.4	20.7	21.0	19.0
1.3 Intermediate Goods and Public Consumption	13.0	13.8	19.4	12.9	13.5	14.5	15.5	17.0	19.0	21.5
2. Travel	2.4	3.4	3.2	3.6	3.7	3.8	4.1	4.4	4.7	5.0
3. Other Services	2.4	3.5	4.2	4.2	5.0	6.0	6.6	7.2	7.8	8.4
4. Imports of Goods and Services (Rows 1 + 2 + 3)	46.5	51.8	61.1	57.2	62.4	69.4	76.5	77.6	81.2	82.9

Notes on Above

Rows 1, 2, 3, and 4 are actuals for 1961, 1962 and 1963, preliminary for 1964.

Row 1.2 calculated at 45 per cent of gross capital formation.

TABLE 8 International Transactions (JD Million)

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
1. Exports of goods and services	17.0	19.1	20.3	24.2	28.2	32.1	36.7	43.0	50.9	59.2
2. Net Factor Income	7.0	11.9	8.6	12.2	9.8	10.1	10.3	10.6	10.8	11.1
3. Current transfers to households (including UNRWA in kind)	3.3	3.3	3.3	3.3	3.4	3.4	3.4	3.5	3.5	3.5
4. Current transfers to Government	16.4	14.7	14.0	18.6	12.8	12.0	11.0	10.0	8.0	6.0
5. Development grants plus revenue from PL 480 sales	2.9	2.8	3.7	3.3	6.6	8.4	6.8	3.5	3.5	3.5
6. Current receipts (Rows 1 to 5)	46.6	51.8	49.9	61.6	60.8	66.0	68.2	70.6	76.7	83.3
7. Imports of goods and services	46.5	51.8	61.1	57.2	62.4	69.4	76.5	77.6	81.2	82.9
8. Deficit on current account (Row 7 — 6)	—0.1	—	11.2	—4.4	1.6	3.4	8.3	7.0	4.5	—0.4
9. Net addition to currency cover and IMF contribution	1.7	2.4	2.2	2.7	1.0	1.0	1.0	1.0	1.0	1.0
10. Repayment of foreign loans	—	—	0.1	0.1	0.5	0.8	1.2	2.4	2.7	4.6
11. Other monetary movements	1.2	4.1	—5.1	0.5	0.5	0.6	0.7	0.8	0.8	0.9
12. Errors and omissions	—0.7	—2.6	—2.0	3.4	—	—	—	—	—	—
13. Total foreign exchange required (Rows 8 to 12)	2.1	3.9	6.4	2.3	3.6	5.8	11.2	11.2	9.0	6.1

Notes on Above

Row 1. Table 6, Row 1

2. Table 6, Row 2

3. Primarily remittances from Jordanians working abroad and receipts of religious institutions (for details see Currency Control Department, Balance of payments for the year 1962, item 9).

5. Includes Arab development grants in 1965, 1966 and 1967.

7. From table 7, row 4

9. It is assumed that the ratio of money supply to GNP in 1962 is maintained during the planning period and that the ratio of demand deposits to total money supply is as follows : 1963, 44.5%; 1964, 46.4%; with one percentage point increase every succeeding year. Currency in circulation is also assumed to have 100% in foreign exchange. Data for 1961 and 1962 from above source.

11. Primarily changes in foreign exchange reserves of Commercial Banks and in foreign exchange liabilities of commercial banks; same source as row 2 above.

TABLE 9 Central Government Provision of Funds to Private sector, Independent Authorities and Municipalities (JD 000's)

	1963	1964	1965	1966	1967	1968	1969	1970
1. Agricultural Credit Corporation	300	500	500	500	500	500	500	500
2. Potash	—	—	—	1000	3000	5000	2000	—
3. East Ghor Canal Authority	—	100	100	100	100	100	100	100
4. Industrial Development Loans (Net)	100	375	640	440	310	250	150	100
5. Loans to private sector (Row 1 to 4)	400	975	1240	2040	3910	5850	2750	700
6. Repayments to central government	165	—	25	25	150	150	250	250
7. Net loans to private sector (Row 5 — 6)	235	975	1215	2015	3760	5700	2500	450
8. Municipal, rural and housing projects (Net loans)	400	200	1770	1294	1010	655	375	325
9. Net increase (Rows 7 + 8)	635	1175	2985	3309	4770	6355	2875	675

Notes on Above

Row 1. Borrowings of Central Government and re-loaned to A.C.C.; JD 1.1 million avaliable through I.D.A. loan in 1963.
2. Borrowings of Central Government and re-loaned to Arab Potash Company.
3. For payments to landowners.
4. For hotels and industry.

TABLE 10 Income and Expenditure of the Private Sector (JD Million)

	1963	1964	1965	1966	1967	1968	1969	1970
1. Gross national product	137.5	158.3	168.3	181.3	195.9	204.1	216.3	226.0
2. Indirect taxes	10.6	12.5	15.2	16.0	17.1	18.1	19.5	20.7
3. Government income from property and entrepreneurship	4.1	6.0	5.4	5.0	4.7	4.4	4.5	4.7
4. Gross income of private sector (Row 1—2—3)	122.8	139.8	147.7	160.3	174.1	181.6	192.3	200.6
5. Current transfers to private sector	3.3	3.3	3.4	3.4	3.4	3.5	3.5	3.5
6. Direct taxes	2.1	2.1	3.4	3.9	4.2	4.4	4.6	4.9
7. Other current transfers to government	2.6	2.7	3.0	3.2	3.4	3.6	3.8	4.0
8. Revenue of local governments	2.4	2.6	2.9	3.2	3.5	3.8	4.2	4.6
9. Gross disposable income of private sector (Row 4+5—6—7—8)	119.0	135.7	141.8	153.4	166.4	173.3	183.2	190.6
10. Private consumption	116.3	120.9	125.8	130.8	136.1	141.5	147.2	153.1
11. Gross private savings (Row 9—10)	2.7	14.8	16.0	22.6	30.3	31.8	36.0	37.5
12. Net government loans to private sector	0.2	1.0	1.2	2.0	3.8	5.7	2.5	0.5
13. Purchase of government bonds	—	—	—	0.2	0.5	0.9	1.5	2.0
14. Foreign borrowing	1.1	—	—	—	—	—	—	—
15. Funds available for private investment (Row 11+12—13+14)	4.0	15.8	17.2	24.4	33.6	36.6	37.0	36.0

Notes on Above

Row 1. Table 1, Row 10
2. Table 2, Rows (1+3+5) plus national guard tax included in Row 2 and assumed to be as follows: 1966 JD (1.4) million, 1967 JD (1.7) million, 1968 JD (1.9) million, 1969 JD (2.3), 1970 JD (2.6) million.
3. Table 2, Row (6+7+8)
5. Table 8, Row 3
6. Table 2, Row 2 less national guard tax.
7. Table 2, Row 4
8. Table 11, Row 4
10. Table 1, Row 1
12. Table 9, Row 7
13. Table 2. Rows 23

TABLE 11 Local Government Revenue and Expenditure

(JD 000's)

	1963	1964	1965	1966	1967	1968	1969	1970
1. Current Expenditure	1565.3	1659.2	1758.6	1864.3	1976.2	2094.8	2220.5	2353.7
2. Capital Expenditure	1203.8	1200.0	2300.0	2320.0	2270.0	2310.0	2150.0	2250.0
i) Water	355.4	500.0	900.0	820.0	570.0	500.0	150.0	150.0
ii) Other	848.4	700.0	1400.0	1500.0	1700.0	1810.0	2000.0	2100.0
3. Total Expenditure (Rows 1 + 2)	2769.1	2859.2	4058.6	4184.3	4246.2	4404.8	4370.5	4603.7
4. Revenue	2368.7	2605.6	2866.2	3152.8	3468.1	3814.9	4196.4	4616.0
5. Municipal Borrowing (Row 3 — 4)	400.4	254.6	1192.4	931.5	778.1	589.9	174.1	—12.3

Notes on Above

Row 1. Based on 6 per cent annual increase over 1963.
2(i) See Schedule in Chapter 6 entitled "Water — Major City and Municipal Water Projects".
4. Based on 10 per cent annual increase over 1963.

CHAPTER 3 *THE FISCAL PROGRAM*

To move Jordan as rapidly as possible towards economic self-sufficiency is the overall goal of the Seven Year Plan. The means of achieving this goal are provided in the capital formation programs of the various sectoral plans that follow in subsequent chapters. These capital projects when completed will have changed the structure of the Jordan economy, reduced its balance of trade deficit through expanded exports and limited imports, increased its total output, and in this way have moved Jordan many giant steps nearer to its ultimate goal. But no movement will take place, no expansion will be implemented regardless of its engineering feasibility without the necessary financial means to carry out the expansion. This chapter explains the details of the fiscal program which must be implemented by the Jordan Government to enable it to achieve its goals.

The fiscal program of the Seven Year Plan is a very important part of the Plan and, in fact, it can be said with complete confidence that without the acceptance of the revenue and expenditure targets presented here, the impact of the Seven Year Plan will be small at best.

A fiscal program, or fiscal policy as it is more often called, is defined as the taxing, spending, borrowing, and debt management of a government. All governments have a fiscal policy, for all governments tax and spend; some have an unplanned fiscal program and make expenditures and raise revenue in a fragmented manner related only to the needs of the moment. Others may seek neutrality as the goal of their fiscal program, failing to realize that all fiscal programs necessarily affect the economy, and that fiscal neutrality is a myth. Jordan would be derelict if it failed to make positive use of its fiscal policy as the main force to join the public and private sectors into a partnership to restructure its economy, to move it towards self-sufficiency, towards less dependence on external budget support, and towards a high level of economic growth.

Current Fiscal Position

What is the fiscal position of the government on the eve of inaugurating the Seven Year Plan?

Before we can answer that question, we must take a brief look at past fiscal patterns.

Table 1 shows past revenue sources by budget chapters.

From Table 1, it can be seen that until 1962/63, more than half of Jordan's revenue has come from direct budget support and development grants and loans from foreign governments. It can also be seen that tax revenues come mainly from indirect taxes. The most important of these indirect taxes is customs collections which account for 45 to 55 per cent of tax revenue. Indirect taxes tend to be regressive — i.e. to fall more heavily on those with low incomes.

TABLE 1 Government Revenue Sources by Budget Chapters (JD 000's)

	1960-1	1961-2	1962-3	1963-4
Chapter 1 — Customs and Excise				
Imports duties	4,599	4,248		
Excises (1)	642	1,517		
Fees	322	255		
Total Chapter 1	5,563	6,020	6,368	7,200
Chapter 2 — Taxes				
Income tax	824	927		
Land and building tax	345	475		
All other taxes (2)	899	1,124		
Total Chapter 2	2,068	2,526	3,089	3,400
Chapter 3 — Licences				
Import licenses	458	432		
Trade licenses	126	135		
Road licenses	186	201		
All other	80	99		
Total Chapter 3	850	867	941	1,000
Chapter 4 — Fees	2,106	2,075	2,330	2,600
Chapter 5 — Post, Telephone & Telegraph (3)	697	771	1,013	1,100
Chapter 6 — State Domain	72	122	65	100
Chapter 7 — Interest and Profit	913	1,117	1,175	1,200
Chapter 8 — Miscellaneous Income (4)	1,571	1,180	6,124	2,800
Total Domestic Revenue (Chapters 1 through 8)	13,840	14,678	21,105	19,400
Chapter 9 — Budget Support	16,436	16,419	14,500	14,000
Chapter 10 — Other foreign grant and loans	1,623	2,978	2,545	3,300
Total Revenue (Chapters 1 through 10)	31,899	34,075	38,150	36,700

1. Increase between 1960-1 and 1961-2 due to increase in excise on petroleum products.
2. Includes National Guard tax and Social Welfare tax, which derive part of their revenue from additional import duties charged.
3. Increase in 1963-64 dependent on rate increase.
4. Large revenue in 1962-63 due to non-recurring tapline payment.

TABLE 2 Government Actual Revenues and Recurring Expenditures 1961-62 to 1963-64 (JD Million)

	1961-2	1962-3	1963-4
1. GOJ domestic revenue	14.7	21.1*	19.4
2. Budget support	16.4	14.5	14.0
3. Receipts excluding grants and loans (Row 1 & 2)	31.1	35.6	33.4
4. Recurring Periodic Expenditures	28.0	29.9	33.2
a) Civilian	9.3	10.8	12.1
b) Army and security	18.7	19.1	21.1

* Includes non-recurring oil Tapline revenue of JD 3.6 million.

Table 2 shows the considerable growth of recurrent expenditures in the past three years. The level of spending has been dependent upon, (1) direct budget support, (2) the non-recurring Tapline revenue of 1962/63, and (3) the utilization in 1963/64 of earlier budget surpluses.

Finally, it is desirable to consider Jordan's balance of payments. These are presented in Table 3.

TABLE 3 Jordan Balance of Payments 1961, 1962 and 1963 (JD Million)

	1961		1962		1963	
	Credit	Debit	Credit	Debit	Credit	Debit
A. *Goods and Services*	20.57	46.08	27.57	50.75	25.17	61.35
1. Merchandise	5.27	40.93	5.92	43.51	6.56	53.63
2. Freight & Insurance	0.86	0.17	5.13*	0.28	1.75	0.31
3. Other transportation	—	0.41	—	0.80	—	0.51
4. Travel	4.34	2.44	5.05	3.42	6.00	3.20
5. Investment Income	1.19	0.20	1.37	0.30	1.11	0.23
6. Government	1.06	0.99	1.30	1.39	1.19	2.53
7. Other Services	7.85	0.94	8.80	1.05	8.56	0.94
Net goods and services		25.51		23.18		36.18
B. *Transfer Payments*	26.26	—	25.21	—	24.14	—
8. Private	1.70	—	1.74	—	1.62	—
9. Government	24.56	—	23.47	—	22.52	—
9.1 U.K. Government	2.36	—	1.50	—	1.50	—
9.2 USA Government	17.05	—	16.71	—	15.51	—
9.3 UNRWA & other agencies	5.15	—	5.26	—	5.51	—
Net transfer payments	26.26	—	25.21	—	24.14	—
Net total (1 through 8)	—	23.81	—	21.44	—	34.56
Net total (1 through 9)	0.75	—	2.08	—	—	12.04

* Includes non-recurring Tapline payment of JD 3.6 million.

The above table was derived from the Currency Control Department publication "Jordan Balance of Payment 1963". The 1961 figures are revised to correspond with new reporting methods. The data given above differ in presentation from those presented in Chapter 2, Tables 6, 7, and 8, in which the earlier reporting method was followed.

From Table 3 it can be seen that direct budget support from the United States and the United Kingdom have served as a major factor in balancing Jordan's current account. To the extent that this gift source of foreign exchange declines, Jordan must find new sources. These must come partly from loans, and partly from increased exports, but in any case, imports must be held down or the foreign exchange problem will be compounded. Actually as we will see later, not only must the rate of growth of imports slow down, but the composition of imports must shift from emphasis on consumer imports to emphasis on capital imports.

These tables give the perspective to comment on Jordan's current fiscal position. It is sobering !

First, direct budget support, so important in the past, has actually declined in fiscal 1964/65 below 1963/64 level and our projections assume further decline in the future. Either reductions in expenditure or new sources of revenue will be needed to offset this decline.

Second, budget reserves (from accumulated surpluses over the years) which have allowed the Jordan Government the unusual luxury for a developing country of an unbalanced budget, were seriously reduced by the end of the 1963/64 fiscal year. Developing countries such as Jordan ordinarily need to maintain a balanced budget for two important reasons, (a) budget deficits tend to impair international confidence in a developing country's fiscal position, and (b) deviation from the balanced budget may allow expanded spending by ministries such as occurred in 1962/63 following receipt of the windfall JD 3.6 million of non-recurring oil tapline revenue.

Third, the major domestic revenue source, customs receipts (See Table 1) will cease to grow as the limit on imports and the shift in imports to exempted items required by the Seven Year Plan take place. Reducing the growth in customs collections means that other revenue sources must be found to replace declining budget support and pay for the costs of the Plan.

Finally, major restraints on government spending for recurring expenditures should be exercised if the capital plans of the Seven Year Program are to be implemented. Spending austerity, though it involves short-run sacrifices, will provide long-run benefits and growth.

Impact on the Economy

A government's fiscal policy does not affect the government alone. It affects the total economy. It is a means whereby the government can *indirectly* lead economic activity in a particular direction. It is the only means available short of direct controls, for the Government of Jordan to insure the year-by-year accomplishment of the programs of the Seven Year Plan.

The Seven Year Plan as pointed out in Chapter 2 proposes to channel economic growth in the future more into investment and less into consumption than in the past. In this way Jordan will be developing a broader capital base for more future growth and eventual economic independence. But these bland statements have certain rigorous implications. This growth will not take place unless :

1) Consumer spending especially on imported luxuries is prevented from growing as fast as it has in the past.

2) Increased levels of private savings are channelled into productive investments.

3) Government recurring expenditures, civilian, army and security, which are not related to implementing capital projects, are permitted only slight growth or, indeed, are curtailed.

4) Tax revenue expands to replace declining budget support and pay for planned capital projects.

5) Exports expand and imports hold steady, and the composition of imports shifts away from consumer to capital items. (The Plan, of course, encourages the expansion of local import-substituting industries).

6) Government borrowing and consequently government debt increase to fill the gap between government revenue and government capital and recurring expenditures.

The six requirements listed above add up to a program of austerity for the citizens of Jordan and their government. Economic growth does not come without sacrifices, and economic growth in the face of declining budget support means even greater sacrifices. These sacrifices will be made willingly by most of the people involved.

Because of those who would choose immediate present consumption over greater future gain, the government must establish some ground rules and boundaries. These boundaries will be established indirectly, by fiscal policy, not directly by specific government controls. Later, as the Jordan Central Bank becomes fully operative, monetary policy will provide welcome support to fiscal policy [1].

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[1] See chapter 18, Financial Institutions.

THE FISCAL PROGRAM FOR JORDAN

Jordan needs an overall fiscal policy that relates taxing, spending, borrowing and debt management to its overall goals and commitments both domestically and internationally. Each aspect of fiscal policy is discussed below.

1. *The Spending Program*

The government spending program is summarised in Chapter 2 Table 3 for Recurring Expenditures and Chapter 2 Table 4 for Capital Expenditures. The spending program is designed to do two things. First it includes capital spending out of budget funds in each of the seven years in spite of the great pressure on funds. This is essential, for in order to get loans we must first prove to potential foreign lenders and grantors that Jordan is determined to grow in spite of the sacrifice involved. Second, recurring expenditures are put on an austerity basis in order to hold taxes down as much as possible while still freeing some funds for capital spending.

The Government has had access to additional funds in each of the last three years; in 1962/63 a non-recurring payment of JD 3.6 million was received from the Tapline Oil Company; in 1963/64 budget reserves were reduced from about JD 4.8 million at the first of the year to about JD 1.9 at the end of the year. In 1964/65 a loan of JD 5 million was made available to the Government from Kuwait. These additional funds, of which at least the first two are non-recurring, have permitted expenditures to exceed current revenues.

The Plan calls for Recurring Expenditures to increase from JD 33.2 million in 1963 to JD 41 million in 1970.

Fortunately, the Government now has a competent Budget Department that understands both the planning function and the control function of the budget process. In implementing the Plan, the Budget Department will be required to allow some of the ministries flexibility between programmed recurring expenditures increases and capital expenditures. For example the Education Ministry may need, in selected years, to use some of its capital funds allocated for building schools in order to rent schools and hire more teachers. No long-run plan can pinpoint the exact spending needs a number of years in the future, so flexibility must exist when properly justified by the ministry involved, the organization best qualified to know the needs of the sector at the moment.

The central government capital spending pattern over the seven years is given in Table 4 of Chapter 2. Calling for capital projects of JD 8.3 million in 1964, it rises in the middle years to JD 29.8 million in 1967 and then declines to JD 15.3 million in 1970.

The Jordan budget, even with extensive external support, will not be able to supply all of the funds necessary for this capital expansion. In fact, the annual budget-generated funds will not supply except a small part of the funds needed to pay for the capital plans. Development grants from abroad and Government borrowing both internationally and domestically will be necessary. Development grants of JD 35.6 million are programmed over the life of the Plan. These are of critical importance to the Plan Both because they relieve some of the budget and borrowing pressure on the Government but also because they provide part of the foreign exchange necessary to finance the imports needed for the capital projects. To the extent these grants are not forthcoming, additional austerity will be necessary and taxes or borrowing increased or spending reduced.

2. *The Tax Program*

Jordan's tax program for the seven year period of the development plan is both complex and comprehensive. It demands increased revenue from many existing taxes, new revenue from new taxes, and modest loss of revenue by repealing certain taxes. Administratively, many changes are needed and general consolidation of rates such as on customs is called for. Actually many of the tax changes and administrative reforms which are needed if the seven year plan is to be effective have already been expertly analyzed by the Royal Fiscal Commission of 1960. The problem enumeration, the problem analysis, and the proposed solutions that were presented in the 1960 Report are still timely and the proposed reforms should be carried out as rapidly as possible.

The new tax program must first of all raise adequate revenue to finance the public investment projects of the Seven Year Plan. Secondly the tax program must siphon off excess income from the populace in order to prevent heavy consumer demand from bidding away the scarce resources needed for capital expansion in the private sector. Finally the tax program should try to be as equitable as possible. It may be, however, that revenue demands required by declining budget support and attempts to reduce the balance of payments deficit will require a more regressive system than that which already exists. In other words Jordan as a developing country may have to subordinate its hopes to have a more equitable distribution of the tax burden to the more pressing needs of expanding production and reducing unnecessary imports.

The tax program for the Seven Year Plan is designed to discourage productive activity and investment as little as possible, to reduce luxury consumption as much as possible, to be economical to collect, and to provide incentive for foreign investors. The revenue targets of the program are shown in Table 2 of Chapter 2.

Proposal 3-1. *Income Tax and Capital Gains Tax*

The program calls for the imposition of new income tax law with a base that includes incomes mentioned in Article (5) of Income Tax Law No. 25 of 1964 in addition to incomes from agriculture, animal husbandry, horticulture, shares, dividends, capital gains and investment from abroad. The new law will impose increased rates on higher income brackets, close the gap against evasions, and impose profit tax on corporations without the right of set-off.

The outright exemption of agricultural income and agricultural land from taxation can no longer be justified given the pressing revenue needs of the Kingdom and rising agricultural income. A special study, of these exemptions, with recommendations, should be made, and in the 1965/66 fiscal year these exemptions should be replaced by a schedule of tax deductions offered as incentive for expenditures made to maintain and improve the productivity of agriculture.

Proposal 3-2. *Land and Buildings Tax*

The present Landlords and Tenants Law must be annulled and replaced by a new legislation that would make urban land and buildings tax a greater source of revenue. In order to accomplish this, the annual rental assessed for the purpose of rent control should be made equal to a percentage of the value of real estate and should vary in accordance with its use. Moreover, the Law should include an Article permitting the landlord to call for the evacuation of the tenants provided he obtains a building licence and undertakes within a limited time to demolish and reconstruct a larger estate.

Proposal 3-3. *Tax on Luxuries*

In 1965 a luxury tax must be imposed on both imported and domestically produced goods. This tax, though hopefully a revenue producer, is mainly designed to cut down luxury consumption and luxury imports and therefore may have a neutral or even a small loss effect on collections.

Proposal 3-4. *Sales or Turnover Tax*

In 1967 a sales tax and an inheritance tax should be inaugurated. Although the sales may be regressive in form, and will not improve equity, it will provide needed revenue to offset the increasing decline in direct budget support. Meanwhile, the inheritance tax would serve to complete the progressive structure of direct taxes.

Proposal 3-5. *Telecommunications Rates*

In terms of non-tax revenue, telephone and telegraph revenues must be increased. A large increase in telephone rates should be made early in 1965.

Proposal 3-6. *Increase in and Elimination of Certain Taxes*

The tax on salt must be increased so as to provide a higher revenue. A study must be made during 1965 by the Ministry of Finance and the Jordan Development Board to determine the desirability of removing the tax on bank checks.

Proposal 3-7. *Substitution of the Present Tax Collection Law by a More Efficient One*

It is essential to adopt a firm policy for collection of taxes because of the futility of having claims for payment without adequate implementation. The existing process of collecting revenues which divides responsibilities between the Ministries of Finance and Interior in accordance with the Law No. 6 for 1952 for levying Government Revenues is a principal obstacle to the collection of arrears. The enacting of a new law for the collection of revenues constitutes a considerable step towards the levying of arrears by entrusting all duties and responsibilities to the Ministry of Finance.

Proposal 3-8. *Needs of Local Governments*

Not only does the national government need extensive new funds over the life of the Plan but municipalities will also require additional revenues.

The constraints placed on municipalities for raising revenue are well known. The time has now come for a special commission to recommend revision of the municipal revenue structure keeping in mind both the needs of the national government and the needs of the growing municipalities as well.

The overall result of the tax program enumerated here is to increase Government domestic revenue over the life of the Seven Year Plan from JD 19.4 million in 1963 to JD 35.3 million in 1970. Of the JD 15.9 million increase in domestic revenues, JD 8 million is projected to offset declining budget support and the balance is needed to meet the increase in government periodic expenditures. Actually, therefore, the Seven Year Plan tax program will not allow any increase in Government-financed capital spending. The bulk of the funds required for public capital formation will have to be provided by foreign loans and grants.

3. *Government Borrowing and Debt Management*

The Jordan Government has borrowing commitments of approximately JD 25 million, excluding the 1964 loan from the Kuwait Treasury. The actual debt amounts to JD 20 million only because some of the funds such as those from the Kuwait Loan Fund have not yet been drawn, although they will be drawn in the near future. Government borrowings (internal and foreign) required by the Plan amount to JD 105 million. In 1964, JD 1.7 million must be borrowed; in 1966 JD 13.1 million must be borrowed, and in 1970 about JD 16.3 million must be borrowed (See Table 2, Rows 23 and 24 in Chapter 2).

Proposal 3-9. *Sale of Bonds in Jordan*

At present all of Jordan's government debt is externally held. There has been no domestic borrowing from banks or the public, and there exists no organized capital or money market to facilitate domestic borrowing. The maturing of Jordan's Central Bank and the creation of a modest capital market, both discussed in Chapter 18 on Financial Institutions, will be necessary to enable the government to borrow domestically through bond sales. Modest bond sales are programmed to begin in 1966 for a total of JD 5.1 million.

In addition to the bond sales the government will need to borrow approximately another JD 100 million over the seven years. Almost all of this must be from foreign sources because of the foreign exchange needs of the Plan (See Table 8, Chapter 2). The debt retirement schedule of current debt is not heavy during the life of the Plan, rising to JD 4.6 million in 1970.

There is a strong likelihood that the Seven Year Plan borrowing program is pushing the upper limits of what is reasonably possible. The debt will be approximately JD 125 million by 1970. In addition, the bulk of the debt will be externally held and will therefore be a greater burden on the economy than a domestically held debt, since interest costs and repayments will not accrue to people and organizations within the economy but to those abroad.

The implication of borrowing programmed to the Kingdom's upper potential is clear. It means that additional borrowing over and above that programmed is not a realistic substitute for a smaller increase in taxes than projected, or letting spending rise faster than programmed. A JD 125 million debt is not too great a burden for Jordan to carry in 1970 given the level of Gross National Product of that year. It is not the size of the debt itself but the rate of its accumulation that will probably serve as the basic deterrent to larger borrowings.

SUMMARY

The Jordan economy wishes to move towards more economic self-sufficiency. To do this a program of austerity will be necessary to promote growth, reduce budget support, and improve its deficit in the balance of payments. Short of direct Government intervention and control of the economy the only tools available to keep both the public and private sectors on the path of the Seven Year Plan are fiscal tools. This chapter offers an integrated program of taxing, spending, and borrowing to provide the funds for the Plan. Each part depends on the other parts. Other programs could be constructed but they must be integrated programs, also. The revenue, spending and borrowing targets demanded here are possible with austerity and sacrifice. Without this austerity and sacrifice, the Plan will fail.

Proposal 3-1

The imposition of a new Income Tax Law with a base to incorporate all incomes including those from agriculture, animal husbandry, dividends, capital gains, investment abroad. The new law will impose increased rates on higher income brackets and taxes on corporation profits without the right of set-off.

Proposal 3-2

Substitution of the Present Landlords and Tenants Law by a new law which fixes the annual rent at a percentage of the estate value. The same law should render it possible for the landlord to demand the evacuation of his property if he intends to demolish it and rebuild it on a larger scale.

Proposal 3-3

In 1965 a luxury tax should be imposed on both imported and domestically produced luxury items. A study is currently being conducted which will recommend items to be taxed and rates to be applied.

Proposal 3-4

In 1966 a special task force of the Ministry of Finance, Ministry of National Economy, Budget Department and Jordan Development Board should be set up to draw up new sales and inheritance tax laws to be passed before the beginning of fiscal 1967/68.

Proposal 3-5

Telephone and telegraph rate increases should be put into effect immediately.

Proposal 3-6

The excise tax on salt should be increased immediately and a study inaugurated to determine the impact of the stamp tax on checks in retarding the use of check money and banking services generally.

Proposal 3-7

Substitution of the present Tax Collection Law by a more efficient one.

Proposal 3-8

A special commission to study the revenue needs of Local Government should be set up early in 1965. Its recommendations should be implemented by fiscal 1966/67.

Proposal 3-9

In 1966, after the Jordan Central Bank has been in operation, the Government should offer some Government development bonds for sale to the Jordan public. The importance of this project to the overall success of the Plan will require careful planning by the Central Bank, Ministry of Finance and the Jordan Development Board. Additional bonds should be for sale, as the money market allows, in each of the subsequent years of the Plan.

CHAPTER 4 *GOVERNMENT ADMINISTRATION*

Successful economic development depends upon many variables, but basically it requires four things — competent planning, adequate financing, efficiency in business and government, and the desire to develop. The crucial role of the Government in Jordan's development emphasizes the importance of having the highest degree of perspective, co-ordination, and efficiency in all phases of Government activity.

The *Council of Ministers* is ultimately responsible for all operations of Government, and thus for ensuring that perspective, co-ordination, and efficiency are of the highest level possible.

Perspective in Government involves assessing the goals to be achieved; these are a composite of economic, political, and social objectives. Equally important recognizing that each action has a "cost" in the way in which that action affects other possible courses of action. With a specified amount of money available for Government spending, a decision to spend JD one million on Project A means that JD one million less will be available for Projects B and C. Alternatively, if Projects B and C are regarded as essential, then it may be desirable to introduce another "cost" in the form of a program to raise more revenue to be able to finance the projects regarded as essential. The Council of Ministers has the ultimate responsibility for assessing the priorities so that the "costs" are as small as possible and the benefits as great as possible to the nation. The Seven Year Plan attempts to give priorities to various courses of action so that the objectives of the nation can be achieved with the least possible cost.

Co-ordination involves ministries and departments working together in such a way that duplication of activity and potential conflict are avoided. As the role and complexity of government increase, co-ordination becomes both more essential and more difficult. The creation of a long range Plan should make easier the task of the Council of Ministers, which is ultimately responsible for co-ordination. Without a Plan, all decisions tend to be short range and *ad hoc*; with a Plan decisions can be related to the proposals of the Plan and co-ordination becomes more easy in that the

Ministers have available a roadmap (the Plan) for the working out of the various proposals in a co-ordinated way.

Ministries have in addition to their important day-to-day duties, the responsibility for carrying out projects as efficiently as possible, for reporting and solving problems in their specialized areas, and for recommending solutions when policy decisions are required in order to overcome difficulties encountered.

The *Jordan Development Board* has the responsibility for planning, for review of progress made in implementing the Plan, for review of trends and developments in the economy, and for certain action projects described below. In all of its activities it is responsible to the Council of Ministers.

This Chapter examines a number of areas of Government administration which are essential if the nation is to achieve its objectives. It is essential that the responsibilities of each agency of government be clarified if the desired level of perspective, co-ordination, and efficiency is to be achieved. These areas of administration are :

I. Planning and review
II. Program administration or implementation
III. Financial administration
IV. Personnel administration
V. Judicial administration

I. PLANNING AND REVIEW ADMINISTRATION

In a country of limited natural and financial resources, planning for economic growth is essential. Ultimate responsibility for the preparation of a plan and for its implementation must lie with the Council of Ministers. However, one agency of Government must be charged with executive responsibility in preparing a plan.Though the Jordan Development Board is the main planning organization of the country, economic planning and development require close co-operation and co-ordination between all parts of government and the planning group.

Planning can be merely an academic exercise unless the financial resources available are directed into the high priority projects of the Plan, and unless the ministries are capable of implementing the various projects, and unless a constant review is maintained as to the progress made in implementation.

Responsibility for financing is shared between the Jordan Development Board and the Budget Department. The latter has ultimate responsibility for the annual Government Budget whereas the Board is the agency responsible for negotiating and disbursing the substantial amount of financial and technical assistance received from abroad.

Implementation of projects is the responsibility of ministries with certain minor exceptions described below under Proposals 4-7 and 4-8.

Review of the over-all progress made in implementation of projects should be the responsibility of the Jordan Development Board, with participation by the ministries concerned.

Review of the present state of the economy and the identification of new and important trends and developments such as balance of payments difficulties should be conducted regularly and reports made to the Council of Ministers.

The Jordan Development Board should be responsible for the following functions :

1) preparation of a long-run plan, with close co-operation from the ministries in the preparation process,

2) seeking out and contracting for financial and technical support from other nations and from the United Nations in order to implement projects,

3) discussions with the Budget Department concerning the Government annual budget to provide the finances necessary to implement projects, although the final decision as to the Government of Jordan budget must remain the responsibility of the Budget Department and, ultimately, the Council of Ministers,

4) review of progress within ministries in the implementation of projects,

5) continuing studies and review of the state of the economy and the identification of trends and developments which may affect the nation in the future. Such studies and review may involve co-ordination with other ministries and in particular with the Budget Department (in regard to Government finances) and the Central Bank (in regard to monetary and foreign exchange developments),

6) engineering studies, feasibility studies, and the placing of contracts for projects which have not yet been assigned to any ministry, or which,

because of financing arrangements, are more suitably the responsibility of the Development Board rather than that of a ministry,

7) geological studies aimed at the location and exploitation of mineral resources.

Proposal 4-1. *Appointment of Ministers to the Jordan Development Board*

The Board was re-organized in 1957 with the Prime Minister as President, and eleven other members consisting of a full-time Vice-President and a full-time Secretary-General, four under-secretaries, the Governor of the Central Bank, the Director-General of the Agricultural Credit Corporation and three representatives of the private sector.

The Board over the years has built the staff and received the co-operation of the Ministries essential for comprehensive long term planning. However, plan implementation is different from plan construction. Now that the Plan is to be implemented, the Board must be strengthened and restructured in such a way as to give it stronger support at the highest level, and to provide it with some additional authority.

In any country, economic development decisions must have broad government support, they must be made at the highest level of government, and be supported by competent staff preparation. This means that economic development decisions are inevitably cabinet-level decisions and that key cabinet members must be active members of the Development Board.

Therefore, it is proposed that the composition of the Board be restructured to include the following : -

The Prime Minister, as President of the Board
The Minister of Agriculture
The Minister of Communications
The Minister of Finance
The Minister of National Economy
The Minister of Public Works
Governor of the Central Bank
Director of the Budget Department
Vice President (full time)
Secretary-General (full time)

Not only will the Board need to be restructured to meet the added responsibilities of the co-ordination and review functions but it will also have to meet more regularly and more frequently than in the past.

In addition, a specific decree from the Council of Ministers should be issued directing the professional staff of the Board to review and coordinate the development activities in the Ministries. As slow-downs, bottlenecks and inter-ministry problems develop, and they inevitably will, the planning and review staff of the Board should inform the Board of the problems and recommend alternative solutions to the Board for action in order to maintain steady progress in economic development.

Proposal 4-2. *The Development Board as a Source of Economic Information and Advice to the Council of Ministers*

The Council of Ministers as the pre-eminent group in the decision-making process is sometimes called upon to make decisions with less than adequate background information. Although perfection in this area is not possible, some regular source of organized information about trends in the economy and about proposals for expenditures should be available to the Council. The Jordan Development Board should occupy this important role using the following procedure :

a) The professional staff should prepare monthly reports for the Board on the state of the economy, balance of payments, cash and reserve position of the government, and any other similar relevant subject. Members of the Board will then decide whether such information is of sufficient national importance to be passed by the Board to the Council of Ministers.

b) As proposals for additional or altered expenditures or revenues are entertained in the Council of Ministers, these should be passed to the Board for analysis as to their impact on the economy and on economic development. If time is available, proposals may be subjected to detailed analysis by professional staff, but regardless of time available they should be submitted to members of the Board for consideration as to their likely economic and financial results to the Government and the economy as a whole. This procedure should apply to proposed changes in revenues as well as in expenditures.

c) In addition to reviewing proposals made for changes in expenditure and revenue, the professional staff should be charged by the Board with the responsibility of proposing changes in levels and types of revenues in order to meet the changing economic conditions of the economy.

Proposal 4-3. *Negotiations with United Nations for financial and technical assistance should become the responsibility of Jordan Development Board*

The Board is at present responsible for negotiations with all countries in regard to development loans, grants and technical assistance. The Ministry of Foreign Affairs is responsible for correspondence and negotiations with the United Nations and its agencies. This procedure, in spite of the best of good will and intentions by all parties, leads to considerable duplication, confusion and delay, especially since aid from United Nations must be carefully co-ordinated with bilateral aid from other countries and with the Government's own budget program.

It is proposed, therefore, that the Jordan Development Board be given the responsibility for negotiations with the United Nations and its agencies in regard to financial and technical assistance. Some reduction in cost should result from this change.

Proposal 4-4. *Formalize relations between Budget Department and Jordan Development Board*

The Budget Department is responsible for the Government budget; the Development Board is responsible for the sizeable amounts of financial and technical aid received each year from the bilateral aid agencies. Obviously both agencies need to be aware of the actions of the other and in some cases to make decisions only after consultation with each other. Currently, the informal relationship and co-operation between the Department and the Board is excellent. However, the relationship needs to be formalized along the following lines : (a) the Department will be consulted before any foreign aid contract is signed, and (b) the Board will be consulted while the annual budget is under preparation, and given an opportunity to appraise the degree to which the budget provides finance for the programmed projects of the plan and to appraise the fiscal policy implicit in the total budget.

Proposal 4-5. *Formalize relations between the Ministries and the Jordan Development Board*

The appointment by Ministers of a senior officer in each ministry who was both the Budget Officer (working with the Budget Department) and the Planning Officer (working with the Jordan Development Board) contributed substantially to the successful formulation of the Seven Year

Plan. However, it should be recognized that planning is a flexible and continuing process and that no plan when finished should be regarded as fixed. It is the goal of the Board to have what may be called a "continuous seven year plan". A "continuous plan" is a plan that adds a year on the end, each time the year at the beginning is finished, while making necessary modification in the middle years of the plan as required in the light of new developments and more accurate information. In this way, the plan becomes a living document and not a fixed list of projects whose priorities may need changing in the light of intervening events.

In order to facilitate the continuing planning process, it is proposed that the Ministers designate one senior officer of the Ministry as Budget, Planning, and Review Officer who would be responsible for the review of development projects in process in the Ministry and for discussions with the Board staff working in his sector of the economy. In this way the Board representatives will become something of a consultant to the Budget, Planning and Review officer of the Ministry.

Proposal 4-6. *Study of Optimum Location of Statistics Department*

One of the major tools of a planning and review group is statistical information. In the early years of the Development Board when most of the staff effort was oriented towards planning, the existing location of the Department of Statistics served the country well. Now, however, as the Jordan Development Board takes on the vital review function in addition to its planning function, there is some justification for a re-evaluation of the place of the Department of Statistics in the governmental structure. Therefore it is proposed that in 1965 the Prime Minister should appoint a committee to study the optimum location of the Statistics Department in the light of Jordan's maturing government structure. The committee should include a representative of the Ministry of National Economy and the Jordan Development Board.

Proposal 4-7. *Consolidation of Geological and Mineral Services*

At present three agencies of Government are involved in the important area of geological exploration and analysis :

a) The Mineral Resources Division of the Ministry of National Economy with which is associated the German Geological Mission

b) Geologists of the Central Water Authority, and

c) Geologists and mining engineers of the Jordan Development Board.

It is proposed to bring these groups together in one section attached to the Jordan Development Board. This change should be formalized in the 1965 budgets of the three agencies involved. Not only should the resulting consolidated agency be more effective, but some reductions in cost should ensue.

II. PROGRAM ADMINISTRATION OR IMPLEMENTATION

The individual ministries operating systematically and efficiently in their own special areas are the very fabric of government. Now as the Plan becomes operational their possible contribution to it increases manyfold. The ministries' role, indeed, is paramount — they will actually implement the sectoral programs, spend and account for the money, be the agencies in touch with the economy and responsible not only for carrying out projects but also for reporting to the central planning authorities the difficulties and bottlenecks encountered in practice, and for recommending the action needed to meet those difficulties. For these reasons not only does the structure of the Government as a whole need examination but the structure of each Ministry as well, to ascertain whether as presently organized it can efficiently carry out its part of the Plan, and can smoothly co-ordinate its activities with other sectors and with planning authorities.

Proposal 4-8. *Organization and Methods Unit for Public Administration*

In general, it is proposed that each ministry take the responsibility for studying and improving its present organization systems, and procedures. Some of the more obvious problems appear to be the following :

a) Cases of excesses in the number of individuals reporting to one minister or senior official. At present, one under-secretary has seven assistants reporting direct; another has three plus fifteen directors; seven departments report direct to the Prime Ministry. Such figures are at first sight greatly in excess of what modern managerial practice regards as an efficient span of control.

b) Cases of insufficient delegation of authority and responsibility at all levels resulting in misuse of the time of ministers and senior officials by diverting their attention to comparatively trivial matters which should be handled at a lower level.

c) The practice of frequent transfers of senior civil servants among ministries, resulting in loss of efficiency while they become familiar with their ministries.

To provide aid to the ministries in meeting these problems there should be available to each ministry on request (and working systematically through all ministries) an Organization and Methods Unit in the Civil Service Department. (This proposal is also dealt with below as part of Proposal 4-12).

III. FINANCIAL ADMINISTRATION

The Minister of Finance is responsible for raising the necessary revenue for Government, for tax collection and administration, for government borrowing and debt management, for the preparation of the annual budget, and for accounting.

Proposal 4-9. *Strengthening of Budget Department Staff*

The Budget Department is crucial to the economic health and development of the nation. It has already made great strides in rationalising the process of financial allocation and control, particularly in reshaping the annual Budget Law on functional lines. It cannot be too strongly emphasized that the Department in its day-to-day and year-to-year activities is just as much a short-term planner as a financial controller; the annual budget represents in one aspect the Government implementation of its part of the Plan, and subsequent adjustments as circumstances change have to be made with due attention to planning considerations as well as financial control. It follows that the Budget Department, above all other Government agencies, must be associated as closely as possible with the planning function at all levels and at all times : it also follows that its terms of reference as defined in its statutory powers must take due account of that responsibility. The Department's staff should be increased to meet the dual demands on it. The over-riding necessity, in any efficient and acceptable Government, of prompt and effective financial control means that any shortage of staff will fall on the planning function.

Proposal 4-10. *Improved tax collection and early closing of accounts*

Tax collection. There are at present considerable arrears of taxes. More important, tax revenue has failed to keep pace with the growth of national product. Reference was made in the Introduction (Chapter 1) to an increase of 158 per cent in Gross National Product from an average of JD 51.1 million in 1954 and 1955 to JD 131.9 million in 1962 and 1963. The Statistical Yearbook shows that direct taxes, indirect taxes, and fees rose only 95 per cent from an average of JD 5.6 million in fiscal 1954/55 and 1955/56 to an estimate of JD 10.9 million in 1962/63 and 1963/64. These considerations suggest that overhaul of the tax collection system has a high priority for early action. Draft reforms for income tax are already in existence and should be given immediate consideration.

Accounting. The growth of the public sector both in absolute and relative terms clearly calls for continuing and close review of accounting systems to ensure that their efficiency keeps pace. The annual Government accounts should follow the functional framework newly adopted by the Budget Department. Above all, the greatest emphasis must be placed on early closing of the accounts : each day's delay in closing them reduces their value more than proportionally and they should be closed not more than six months after the end of the fiscal year.

Auditing. A period of considerable and increasing Government action, particularly in the capital sphere, is almost by definition one in which misallocation and misuse of Government funds can increase out of all proportion under the pressure of achieving targets. The Audit Bureau has recently had its legal powers reinforced : by applying its present high standards (backed by these new powers) to the increased expenditures involved in the Plan, it will play an indispensable part in its implementation.

IV. PERSONNEL ADMINISTRATION

Proposal 4-11. *Expansion and re-organization of the Civil Service Department*

The Civil Service Department has served Jordan well in making use of the manpower available within budget limitations. In many ways the Department is the center of Government as an administrative structure. In the light of the past growth in Government, it is now proposed that the Department be re-organized into divisions on a strictly functional basis. There should be seven main divisions plus a small section for purely internal administration. Though the Under-Secretary will remain responsible to the Head of the Civil Service Department for all the activities of the Department, it will be necessary for him to be supported by two Assistant Under-Secretaries, each of whom will be responsible for three functional divisions, leaving the seventh and the administrative section under the Under-Secretary's direct control. The divisions would be grouped as follows :

a) *Assistant Under-Secretary No. 1*

i) *Recruitment Division* — selection and initial appointment of all civil servants.
ii) *Training Division* — pre- and in-service training of civil servants.
iii) *Organization and Methods Division* — advising all Government ministries and departments on efficient internal organization systems.

b) *Assistant Under-Secretary No. 2*

i) *Personnel Division* — all aspects of the Government's day-to-day relationships with its employees, such as promotion, transfers, leave, disciplinary action.
ii) *Legal Division* — all legal matters relating to public administration within the Civil Service Laws.
iii) *Classification Division* — grading of all posts in the Civil Service to ensure proper equation of salary and responsibility.

c) *Reporting direct to Under-Secretary*

i) *Co-ordination Division* — ensuring effective inter-relationship between the six divisions previously listed.
ii) *Administrative Section* — internal administration of the Civil Service Department.

The foregoing expansion and reorganization will involve an eventual increase over the Department's present staff of about 150 per cent. Although such an increase cannot be effected in a single year for physical and budgetary reasons, it cannot be spread evenly over the period of the Seven Year Plan since to a great extent the effectiveness of the entire Government structure depends on its implementation as early as possible. It is proposed therefore that the expansion should take place over not more than three years, with divisions reaching full strength in the following fiscal years (though each should be set up in embryo earlier):

1964/65 — Training Division and the Organization and Methods Division,
1965/66 — Personnel Division and Recruitment Division,
1966/67 — Classification Division, Legal Division, Coordination Division.

Additional staff over the 1963/64 level will be required as follows:

1964/5	1965/6	1966/7	1967/8	1968/9	1969/70	1970/71
10	15	20	—	—	—	—

Proposal 4-12. *Study of Salary and Pension Structure*

A point of concern is the level of remuneration of civil servants viewed in the light of the increasing number of Jordanians, particularly graduates, taking up employment abroad because of disparities between local salary scales and those available in other countries. The Plan envisages a significant and increasing contribution to the balance of payments from this source. However, if the salary disparity is too great there is a clear danger that the internal needs of the country will not be met, particularly with regard to quality. Civil service remuneration is clearly an area in which independent objective advice is required, and a small expert committee including a representative of the Civil Service Department, the Ministry of Finance, the Jordan Development Board, and possibly a non-government member should be set up not later than June 1965 to report on the adequacy of present renumeration. This committee will have to balance the need to induce high-quality staff to join and remain in the service with the country's ability to pay for it. The Civil Service Department has already begun a series of studies of selected groups of qualified people with regard to salary prospects. These studies should be pressed forward urgently and the results made available to the expert committee as they become available. Their value will be mainly in indicating to the committee the levels of salary required to attract suitable staff.

Regarding Jordan's ability to pay such salaries, it is necessary to examine the place of the pensions system in total remuneration. As in most established civil services, pensions are important both from the point of view of the potential recruit and from that of the Budget Department. Pension payments have been growing very fast as a result of a new Pensions Law introduced in 1959, and subsequent administrative additions. The resultant pensions deficit has increased recently as follows : -

(JD 000's)

Year	Expenditure: Pension Payments	Revenue: Pension Contributions	Pensions Deficit
1957/58	136.7	79.5	57.2
1958/59	148.8	201.0	— 52.2
1959/60	303.3	482.9	—179.6
1960/61	626.4	544.0	82.4
1961/62	959.5	521.0	438.5
1962/63	1,292.7	516.9	775.9

There have been increases in total payments of JD 333,000 in each of the last two fiscal years; revenue from contributions, on the other hand, has actually fallen slightly in the same period. The increase in the deficit has averaged JD 347,000 per annum during the last two years. The data available do not allow any accurate estimate as to likely increases in pension payments in the future; such calculations lie in the expert actuarial field. If, however, recent trends are maintained, on the contributions (revenue) side the recent drop should be reversed by staff increases but the resultant increase over 1962/63 is unlikely to exceed JD 100-150,000 per annum by 1970/71 giving revenue in that year of about JD 650,000. As to payments, the annual increase of JD 333,000 of the last two years would result in a total payment of JD 3,957,000 in 1970/71, and a deficit of JD 3,307,000. Monthly payments figures, however, suggest some slackening of the rate of increase since late 1962 to approximately JD 200,000 per annum: this may well be only a temporary hesitation, but if the lower trend is projected total payments in 1970/71 would be about JD 3,000,000 and the deficit JD 2,350,000. The higher and lower projections represent increases of JD 2.31 million and JD 1.35 million over the estimated deficit for 1963/64, against an increase allowed in the plan for 1970/71 over 1963/64 for General Administration (from which all pensions; including military, are paid) of JD 2.1 million. These increases are fully committed to increased services and do not envisage such a substantial increase in the pension deficit as projected above.

If recent trends are maintained it appears that the pensions deficit will not only preclude any outright salary increases but even lead to retrenchment. The proposed committee on salaries will require accurate information on the likely future trend of pension payments before it can make any recommendations on salary structure. It is proposed, therefore, that a request be made immediately for an actuary from one of the aid agencies to conduct an actuarial survey of the pension system which would report to the salary committee as soon as possible after it is set up on the likely future trend of pension payments.

Proposal 4-13. *Increase in official hours of work*

The present Jordan Government working week of 36 hours is low compared to other countries, and certainly below what can be expected of an able, dedicated and suitably remunerated Civil Service. Any salary increases should be linked to an extension of official hours of work.

Proposal 4-14. *Creation of a Manpower Planning Group*

Neither the economy as a whole nor the Government sector will be able to make its required contribution to the overall goals of the Plan without the most careful use of the skilled manpower available to the country — the prime natural resource, in the broadest sense, available to Jordan. The Civil Service Department, as the main Government organ in this field, has a considerable responsibility, and a dual one — not only must it attract and keep the manpower required to carry out Government's functions and allocate it correctly inside the public sector, but it must do so without starving the other sectors of the economy. The first responsibility calls for a standing "manpower planning group", either in the Civil Service Department or with that Department playing a leading role in its initiation and operations : its function should be to ensure the optimum distribution of human resources in the Government sector. The wider responsibility of manpower planning for the whole economy is provided for in proposals made in Chapter 17, Trades and Services. Facilities such as the annual manpower study mentioned there will be available to the Government group.

V. JUDICIAL ADMINISTRATION

The Plan envisages an expansion of commerce both internally, in the form of greater production and exchange, and externally in the form of increased foreign trade and investment. The resulting vastly greater network of commercial relations must involve a similar or greater increase in disputes requiring arbitration or judgement; in addition, the efficiency of the machinery governing the safeguarding of investment is one of the major factors investigated by foreign investors before capital funds begin to flow.

Proposal 4-15. *Creation of a Legal Commission*

The Ministry of Justice should create a legal commission to review and recommend on the present judicial structure and procedures especially as they relate to commercial activities in an expanding economy. It is suggested that the commission could profitably seek the experience of other Moslem countries in this respect.

SUMMARY

This Chapter has recommended the following action :

Proposal 4-1

Restructuring of the Jordan Development Board by the appointment of Ministers.

Proposal 4-2

Requiring the staff of the Jordan Development Board to provide regular economic advice to the Council of Ministers.

Proposal 4-3

Requiring the Jordan Development Board to take responsibility for negotiations with the United Nations for technical and financial assistance.

Proposal 4-4

Formalization of relationships between the Budget Department and the Jordan Development Board.

Proposal 4-5

Formalization of relationships between the Ministries and the Jordan Development Board.

Proposal 4-6

Study of the optimum location of the Statistics Department.

Proposal 4-7

Consolidation of Geological and Mineral Services within the Jordan Development Board.

Proposal 4-8

Creation of an Organization and Methods Unit, within the Civil Service Department, for Public Administration.

Proposal 4-9

Strengthening of Budget Department staff.

Proposal 4-10

Improvement of tax collection and early closing of accounts.

Proposal 4-11

Expansion and re-organization of the Civil Service Department.

Proposal 4-12

Study of Government salary and pensions structure by an expert committee, and actuarial study of the pensions deficit.

Proposal 4-13

Increase in official hours of work, linked with any salary increases.

Proposal 4-14

Creation of a Manpower Planning group for the Civil Service.

Proposal 4-15

Creation of a Legal Commission to review and recommend judicial structure and procedures with particular reference to commercial activities.

CHAPTER 5 *AGRICULTURE*

Agriculture constitutes one of the major sectors in the Jordanian Economy. While providing employment for more than 40 per cent of the labor force, agricultural net income amounted to only 17.3 per cent of Gross Domestic Product during the period 1959-1961.

In 1959/61, 51.3 per cent of the value of total agricultural production came from fruits and vegetables, 19.3 per cent from grains, legumes, and tobacco, 27.2 per cent from livestock, poultry and fish, and 2.2 per cent from forestry and miscellaneous sources.

About 30 per cent of agricultural production is derived from irrigated land.

Although some progress has been made in this sector during recent years, present conditions are not satisfactory. On the one hand, imports of food and feed amount to about JD 12 million, representing more than 25 per cent of the total value of imports. On the other hand, sharp fluctuations in agricultural production, due to the predominance of dry-land farming and recurrent droughts, have a significant impact on all other economic activities in the country. Among the main factors handicapping agricultural development are : low productivity of land and labor, soil erosion, overgrazing of range lands, lack of planned land-use pattern, marketing problems, lack of adequate long-term capital, and unawareness by most farmers of modern techniques of production.

Agricultural development must have a high priority in the development plan of Jordan for the following reasons : -

1) It will contribute significantly towards bridging the balance of payments gap through expanding the production of commodities which are foreign exchange earning and/or foreign exchange saving, or both.

2) Being in general a labor rather than a capital intensive industry agriculture can be the major contributor towards alleviating the existing serious unemployment problem.

3) Since agriculture is generally characterised by a relatively low capital output ratio, its output can, for a given amount of investment, be increased more than that of most other sectors.

4) Finally, agriculture can contribute effectively towards creating a structurally more balanced economy by reducing Jordan's heavy dependence on phosphate, potash and tourism as the primary sources of foreign exchange.

Agricultural production is, and will continue to be, carried out by the private sector. However, the Government has a heavy responsibility in assisting farmers to increase efficiency and expand production. Assistance to farmers is provided by the Ministry of Agriculture, the Department of Co-operatives, the Central Co-Operative Union, the Agricultural Credit Corporation, the Central Water Authority and the East Ghor Canal Authority.

Objectives

1) Increase total production of major crops as shown in Table 1.

TABLE 1 Crop Production Targets by 1970 (¹)

Crop	Value of production 1959-61 aver. (JD 000)	Volume of Production (000 MT) 1959-61 aver.	1970	Production in 1970 as % of 1959-61 aver.
Tomatoes	3,513	165	403	244
Other vegetables	3,745	—	—	113
Citrus fruits	390	9.6	58.5	604
Bananas	510	11.6	21	181
Other fruits	1,609	31	46	148
Grapes	778	58	85	146
Olives	2,135*	47*	67	141
Wheat	3,298*	95*	168	176
Barley	724*	34	56	148
Other grains	885*	21	27	128
Forage (dry)	80	4	31	800
Virginia Tobacco	135	0.9	2.4	266
Hishi Tobacco	77	0.3	.2	67

* Production is highly variable and this average is the result of low production in 1959, 1960 and higher production in 1961.

Oil seeds production will be given emphasis during the Program, but is not included in the above table.

Details by years are given in Appendix, Table I.

2) Increase total production of meat, poultry, livestock products and fish according to the following targets :

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1. All projections are based on the assumption of "normal" crop years.

a) *Sheep.* Increase numbers by 4 per cent per year and increase slaughter weight per animal from 12 kg. in 1961 to 15 kg. in 1970.
b) *Goats.* Decrease of 20 per cent in numbers over the seven years.
c) *Cattle.* No increase is expected in the number of baladi cattle, weight per head can be improved through selection. The plan calls for a large increase in the dairy cattle.
d) *Camels.* Decline in numbers from an estimated 15,500 in 1964 to 6,000 in 1970.
e) *Poultry Meat.* Increase of 200 per cent during the period.
f) *Livestock Products.* Increase during the period of 35 per cent in wool, 17 per cent in milk.
g) *Eggs.* Increase of over 40 per cent in the period.
h) *Fish.* Increase fish production (Aqaba) from 186 tons in 1962 to 1,300 tons in 1970. Fresh water fish production (from ponds) may be begun, and is now under study.

Year by year objectives and details are given in Appendix, Table II.

3) Plant 370,000 dunums of vines, fruit and olive trees during the seven years of the Plan. About 299,000 dunums of new plantings will not start to bear fruit during the period.

4) Investigate new crops whose potential is not yet fully known, such as safflowers, cut-flowers, and sugar beets.

5) Improve marketing channels and distribution, and promote and facilitate exports. Total exports of agricultural products by the end of 1970 should amount to JD 6.5 million.

6) Limit soil erosion through terracing, afforestation, water-shed management and controlled grazing. This includes the planting of an average of 35,000 dunums of forest seedlings per year.

The net farm income of Jordan, which is estimated to have averaged JD 15.8 million in 1959/61, should be JD 28 million in 1970, and the gross value of agricultural production, which averaged JD 19.9 million in 1959/61, should reach JD 34 million in 1970.

Net imports of fruits, vegetables, grains, tobacco, livestock, meat, eggs, and fish, which averaged JD 6.5 million in 1959/61 should decline to JD 3.9 million in 1970. This takes into account an average increase of four per cent per year in local consumption of all the products mentioned except for wheat (3 per cent) and citrus fruits and tobacco (both 5 per cent), and fish (8 per cent per year).

RESEARCH PROGRAM

The Research Department of the Ministry of Agriculture was established in 1958 to conduct applied and practical research work, field experimentation and surveys for solving the practical and pressing problems facing Jordanian farmers.

Progress has been limited by the high rate of personnel turnover due to low pay for the highly qualified staff and the strong demand for trained and highly qualified research workers in the Middle East and in the world at large.

Because of the limited amounts of irrigation water and arable land available, intensive research work directed toward increasing productivity deserves first priority if the targets of the Agricultural Program are to be achieved. Agricultural research requires relatively low capital investment compared to its productivity in increasing agricultural output. In general, research work must be directed toward solving practical problems and testing the applicability in Jordan of results obtained elsewhere; there is little scope, if any, for supporting theoretical research work in Jordan.

Proposal 5-1. *Research on tomatoes and other vegetables*

Vegetable production accounted for about 28 per cent of the Gross Value of Farm Production in the period 1959/61 and vegetables constituted over one-half of the value of all agricultural exports. A large proportion of the land to be newly irrigated during 1964/70 will be devoted to vegetable production.

Yields of tomatoes are only about 50 per cent of those in Europe and about 30 to 40 per cent of those in the United States under fairly similar conditions.

The plan of work will be as follows :

a) conduct intensive well-designed experiments and trials at different locations on spacing, fertilizer application, time of planting and rotation of vegetable crops,

b) conduct experiments and trials on control of plant diseases, insects, and weeds,

c) test new varieties for high production, marketing quality, and disease resistance.

Wadi Fara Research Station will serve as the main research center for vegetable research.

The following figures represent the expenditures required for equipment and additional personnel (JD's)

	1964	1965	1966	1967	1968	1969	1970
Plant Breeding Specialist	—	—	1,440	1,440	1,440	1,440	1,440
Research Officer (2)	600	600	1,800	1,800	1,800	1,800	1,800
Assis. Research Officer (2)	—	—	1,200	1,200	1,200	1,200	1,200
Technical Labourers	1,000	1,000	2,000	2,000	2,000	2,000	2,000
Tools & Equipments	1,000	1,000	7,250	500	500	500	500

Proposal 5-2. ***Research in Plant Protection***

The Research Department will carry out the following research projects : -

1) Conduct a survey of diseases and pests that inflict losses on agricultural products in Jordan. The survey will include classification by genera and species of various pests and their distribution.

2) Test various pesticides and fungicides to find out the best chemicals for controlling plant diseases and insects.

a) *Diseases*

Early and late-blight on tomatoes and potatoes, blue mold on tobacco, powdery mildew on vine, cereals rust, peach curl top, sclerotinia on egg plant, tomatoes and beans, seedling wilting, and nematodes.

b) *Insects*

Fruit fly, olive fly, scale insects, wasps, aphids, codling moth, borers on almond trees trunks, vine moth, cut worms, pomegrenade worm, figs wax insect and almond wasp.

3) Test the following non-chemical methods of control of plant disease and insects : -

a) Agricultural rotation for controlling nematodes, soil-born diseases and wheat leaf miner.

b) Resistant species for controlling fusarium, nematodes, sclerotinia, and virus diseases.

c) Disease-free stocks for controlling virus diseases on citrus.

d) Repeated deep ploughing and summer fallowing for controlling nematodes and soil born diseases.

4) Study the life-cycle of certain pests mainly : -

a) *Diseases*

Fusarium on tomatoes, blue mold on tobacco, peach curl top.

b) *Insects*

Fruit fly, olive fly, beans fly, red spider mites, potatoes tuber moth, apple fruit moth, borers on stone fruits trunks.

5) Carry out studies on the relationship between agricultural pests and climatic conditions.

The implementation of this proposal requires the recruitement of two plant pathologists and two enthomologists starting 1966, a research officer as from the same date and up to the conclusion of the plan period. Two big fumigating machines shall be purchased and operated in 1967 together with 10 hand injectors in 1966. The research program will also require the rental of small plots of land in infected areas.

Expenditures required over that of 1963 (JD's)

	1964	1965	1966	1967	1968	1969	1970
Technicians	3,000	3,000	3,840	3,840	3,840	3,840	3,840
Laboratory and Field Assistants	1,100	1,100	1,100	1,440	1,440	1,440	1,440
Daily labor	1,100	1,100	750	1,200	1,200	1,200	1,200
Field and Laboratory Equipment	1,000	1,500	500	1,200	1,200	1,200	1,200
Others	500	500	500	1,500	1,000	1,000	750

Proposal 5-3. *Research on cereals*

1. *Wheat and Barley*

Wheat and barley occupy about 65 to 70 per cent of all cropped land and yet their value of production is only about 20 per cent of the total agricultural output. Average yields are low and in recent years the recurrent drought and the cultivation of marginal areas have reduced them still further. The objective is to increase the yield of wheat from the 10 year average of 52 kg. per dunum to 70 kg. and that of barley from 56 kg. to 75 kg. per dunum. This will require : -

a) Conducting intensive well-designed experiments and trials at different locations in the dryland areas particularly in regard to methods and time of cultivation and sowing.

b) Testing varieties for high yield, early maturity, disease and drought resistance, and selecting for these qualities.

c) Producing foundation seeds of recommended varieties to be supplied to the Agronomy Section for multiplication and distribution under the Certified Seed Program of the Agronomy Section.

d) Establishment of a dry-land farming research station.

Expenditure Required over that of 1963 (JD's)

	1964	1965	1966	1967	1968	1969	1970
Professional Staff	1,800	1,800	2,160	2,160	2,160	2,160	2,160
Field staff, drivers	1,200	1,200	1,830	1,830	1,830	1,830	1,830
Daily labor	1,500	1,000	1,500	1,500	1,500	1,500	1,500
Overhead	200	200	500	600	700	800	900
Capital investment	—	—	2,000	500	500	500	500
Establishment of Dryland farming Station, land acquisition and equipment	—	—	10,000	2,000	1,000	1,000	1,000

2. *Sorghum, maize and legumes*

These crops shall be included in the research program starting 1966. Research work will be oriented towards selection of varieties for high yield, disease resistance and adaptability for dry-land areas.

a) Introduce and test new varieties under local conditions.

b) Study agricultural practices used in land preparation, planting methods, dates of sowing, fertilizer application etc...

c) Cross-breed certain varieties after determining certain field characteristics.

Expenditure required for this project is as follows :- (JD's)

	1964	1965	1966	1967	1968	1969	1970
Technicians	—	—	1,000	1,000	1,000	1,000	1,000
Tools & equipment	—	—	1,000	150	150	150	150
Overhead	—	—	100	100	100	100	100

Proposal 5-4. *Research on dry-land farming*

This project aims at the testing and demonstration of modern dry-land farming practices and other improvements which check erosion, maintain fertility and conserve water. It will involve :

a) Experimentation and demonstration of selected types of field equipment to assess the most effective methods for both arable farming and range improvement.

b) Assessment of costs and returns associated with the different machines and techniques employed.

c) Agronomic trials and demonstrations of crops for their ability to promote soil and water conservation and to provide economic returns to farmers.

Initially this project will be largely the responsibility of the Research Department with increasing participation and responsibility of the Agricultural Extension Department.

This will be a five-year project beginning in 1964 with the participation of two FAO experts in farm machinery and soil and water conservation along with one agronomist. Government research stations will be used for experimental work; demonstrations will be conducted on privately-owned land.

Expenditure required (JD's)

	1964	1965	1966	1967	1968	1969	1970
Capital expenditure*	30,000	11,000	200	200	200	200	200
Overhead	—	7,950	8,000	8,000	8,000	8,000	8,000

Proposal 5-5. *Research on Virginia Tobacco production and curing*

In 1959/61 an average of 25,000 dunums were devoted to Virginia tobacco production, but yields were low and quality poor. In the same period Jordan imported an average of JD 360,000 worth of tobacco per year. With several efficient cigarette manufacturing firms in Jordan there is a good possibility of considerably increasing the present substantial exports of cigarettes.

The research program should involve experiments and trials on soil fertility, varieties, cultivation practices under both dry and irrigated conditions, curing, and grading, all in co-operation with the tobacco companies. Companies will be asked to share in meeting the cost of this project.

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* From UK Loan

As very little tobacco research work has been done in the past, a foreign technical expert will be requested for a two-year period. One research officer must be appointed in the Research Department as a counterpart to the foreign expert.

Investment required (JD's)

	1964	1965	1966	1967	1968	1969	1970
Research officer	—	960	960	960	960	960	960
Assis. Res. officer	—	—	720	720	720	720	720
Other expenses	—	—	—	500	500	500	500

Proposal 5-6. *Soil Testing*

The Research Department operates two laboratories for testing soil samples as to fertility, water requirements, and salinity. Widespread testing of soils is a prerequisite for increased yields through expanded use of fertilizer and water. The Research Department must provide a soil testing service to individual farmers in order to indicate to them the most desirable amounts of fertilizer to apply for different crops, the levels of salinity of particular soils, methods of reclamation and utilization, and water requirements and timing of application for the crop to be grown.

The Agricultural Extension Department will launch a program to encourage and assist farmers in sending soil samples from their farms via the extension workers to the Research Department laboratories for testing. The Research Department will undertake the testing and return the analysis and recommendations to the extension agents for discussion with the farmers.

One additional soil fertility specialist and several laboratory technicians will be required for this program.

Expenditure Required over that of 1963 (JD's)

	1964	1965	1966	1967	1968	1969	1970
Soil fertility expert	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Laboratory assistants	800	800	920	1,080	1,080	1,080	1,080
Field workers	1,000	1,000	3,600	5,400	5,400	5,400	5,400
Supplies	500	500	500	500	500	500	500
Cars	—	—	1,000	1,000	1,000	1,000	1,000

Proposal 5-7. *Research on range land and forage crops*

Approximately 80 million dunums or 80 per cent of the area of Jordan is classified as range land, yet Jordan imports annually close to JD 3 million of meat and animal products.

Uncontrolled grazing practices for centuries have been the cause of constant deterioration of range land. More recently the deterioration of range areas has been accelerated by the introduction of the tractor and the ploughing of large areas of good Artemesia range land in the marginal and sub-marginal areas for grain production.

The lack of adequate drinking water supply especially in the desert ranges has been the cause of concentration of animals in areas where water is available with the end result of overgrazing and deterioration of the range land of these areas.

Pasture land is so degraded that 100 dunums are considered insufficient to support one sheep or one goat. Thorough vegetation surveys are made for the range areas of the east part of the country. These surveys provide the scientific basis for the improvement and development projects to be implemented.

The Research Department, the Forest Department and the Central Water Authority must co-operate fully with regard to this field (see Proposal 5-39 in Forestry, and Central Water Authority Program). The main objectives of the research work to be carried out in range and pasture improvement are the following:

1) Conduct research studies on pasture regeneration and reseeding by various methods of suitable perennial fodder species. Trials are to be undertaken in typical ecological regions.

2) Conduct studies on the carrying capacity of improved pastures of different range areas.

3) Conduct studies on the most suitable fodder crops to be introduced in the rotation in the uplands and in the Jordan Valley.

One research specialist, one ecologist, one research assistant and two field assistants will be required for this project. This staff must work in close co-operation with the Forestry Department. The annual program of work has to be worked out by the two departments.

The extra expenditure required over that of 1963 is as follows: *(JD's)*

	1964	1965	1966	1967	1968	1969	1970
Research Specialist	—	—	1,440	1,440	1,440	1,440	1,440
Ecologist	—	—	1,200	1,200	1,200	1,200	1,200
Research Assistant	500	500	600	600	600	600	600
Field Assistants	300	300	720	720	720	720	720
Drivers	300	—	500	500	500	500	500
Daily Labor	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Equipment	200	200	400	400	400	400	400

Proposal 5-8. *Research on livestock in the East Ghor area*

Good cropping patterns in the newly irrigated areas of the East Ghor necessitate introducing forages into the rotations. This research project is designed to ascertain the most profitable use of forage as among dairy cattle, sheep, and beef cattle. It will include the following sub-projects :

a) testing of Friesian and Shami cattle under the Ghor conditions,

b) selection and upgrading of Baladi cattle for both meat and milk production,

c) testing of Awasi sheep for fattening under the Ghor conditions,

d) testing of foreign breeds of beef cattle under the Ghor conditions.

One research specialist will be required (starting in 1965) to be in charge of the project. A research officer will be required in 1965 and one additional officer in 1967, in addition to one research officer currently on the staff of the Research Department.

Expenditure Required over that of 1963 *(JD's)*

	1964	1965	1966	1967	1968	1969	1970
Professional Staff	600	600	2,400	3,360	3,360	3,360	3,360
Daily Labor	1,200	2,000	3,600	3,700	3,800	3,900	4,000
Drivers	300	300	1,150	1,180	1,240	1,260	1,300
Feed and other Costs	200	300	4,000	4,000	4,000	4,000	4,000
Buildings, Canals	—	—	2,000	600	—	—	—
Livestock	1,000	—	5,000	—	—	—	1,000
Equipment and Machines	200	300	4,000	3,000	—	—	—

Proposal 5-9. *Research on sheep and goats in upland areas*

The Fujeije Research Station is now being established in the Southern part of Jordan with about 5,000 dunums and appropriate buildings and equipment. At this station, research will be conducted with the following objectives : -

a) to select and upgrade Awasi sheep for meat and milk production under upland conditions,

b) to test alternative feeding and management programs on Awasi sheep.

This research project must be expanded and some of the progeny made available for testing in the Ghor area (see Proposal 5-8).

One additional livestock research officer, who will be in charge of the station and project, will be required.

The goat selection project of the Wadi Walla Research Station, which has been under the direction of the Animal Husbandry Section, should be made the responsibility of the Research Department in 1964, and the program of upgrading of Baladi goat should be continued.

One additional livestock research officer and a specialist in fodder production will be required.

Expenditure required for Fujeije and Wadi Walla research stations over that of 1963 (JD's)

	1964	1965	1966	1967	1968	1969	1970
Specialists and Technicians	3,000	3,000	4,080	4,320	4,560	4,800	5,200

Proposal 5-10. *Research on inland fish production*

In 1962 Jordan's catch of fish was 185 tons (all from Aqaba) whereas imports were 1,478 tons (in all forms), worth JD 285,000. In addition about one-half of the meat consumed in Jordan is imported. In the Seven Year Program, considerable emphasis will be given to the production of both marine and inland fish.

There is no commercial inland fishing at present. Although there have been several small attempts in this direction in the past, they failed because of the lack of specialized "know-how". According to a number of reports prepared by foreign fishery experts, inland fish catches could be substantial and economically profitable. In the Jordan Valley River itself, there is considerable potential through fish ponds, dam reservoirs and the Jordan River itself. The Azrak pools are the second most promising area for inland fish production.

The Research Department has established a pilot project including 14 dunums of ponds at Wadi Yabes. Research work, using these ponds, will begin in 1964 and will be extended, as feasible, to other sites. A foreign expert has been requested to supervise the first year of research and two Jordanians will be given practical training so that they can continue with the research and provide practical advice to fish farmers.

Research will be conducted on the methods of operation, choice of species, and provision of fish stock. If results are promising, the Research Department will make a survey of areas suitable for commercial production, and provide technical advice regarding construction and operation.

Investment required (JD's)

	1964	1965	1966	1967	1968	1969	1970
One research officer	—	—	960	960	960	960	960
Daily labor	—	—	1,000	1,000	1,000	1,000	1,000
Others	798	1,100	2,000	2,000	2,000	2,000	2,000

Proposal 5-11. *Organic Chemistry Research*

Research work in the field of organic chemistry is an essential element for increasing agricultural productivity. It involves research on chemical components of plants and animals and their physiological requirements. Equipment and materials needed for starting such research are available, the scope of work can be summarized as follows : -

1) Conduct a study on plant absorption of minerals through tissue analysis for main and minor elements in order to prepare a comprehensive survey, comprising various regions of the country and showing deficient elements and advising on the best methods of adding such elements to the soil so as to raise production in general. Citrus trees will be considered first.

2) An analysis of the available and imported animal feed will be conducted, and the possibility of producing new animal feeds from agricultural and industrial by-products will also be investigated.

3) Cooperate with various other divisions of the Ministry of Agriculture in carrying out certain activities in the field of organic chemistry.

This project shall require technicians and laboratory assistants and the expenditure required is as follows in *(JD's)* : -

	1964	1965	1966	1967	1968	1969	1970
Specialist in Organic Chemistry	—	—	1,500	1,500	1,500	1,500	1,500
Laboratory Assistants	—	—	480	960	1,000	1,200	1,200
Equipment and Material	—	—	1,500	2,000	2,000	2,000	2,000

Proposal 5-12. *Research on oil seed crops*

The introduction of industrial crops is one of the most important steps towards stabilizing agricultural income of farmers, increasing earnings and/or savings of foreign currency, and helping farmers to move towards diversification.

Oil seed by-products constitute a rich animal feed and consequently, support the growth of livestock industry.

Oil could be produced from safflower, sunflower, sesame, linseed, peanuts, colza and soybeans. Work will be concentrated on safflower, sunflower, and soybeans.

a) Conduct various field experiments on these crops, including date of planting at different locations in dryland areas.

b) Conduct intensive trials for selection of most promising varieties under different ecological conditions in the country.

c) Multiplication and distribution of sunflower and safflower seeds under the seed multiplication and distribution program.

d) Special attention will be given to soybeans because of its high protein content and its importance in the world market.

This project requires the recruitment of a new assistant research officer in 1965, and a research specialist in 1966.

Expenditures required in (JD's)

	1964	1965	1966	1967	1968	1969	1970
Technicians	1,000	1,000	2,040	2,040	2,040	2,040	2,040
Field staff and drivers	600	600	1,800	1,800	1,800	1,800	1,800
Daily labor	1,000	1,000	1,200	1,000	1,000	1,000	1,000
Overhead	—	—	400	800	800	800	800
Miscellaneous	200	200	500	500	500	500	500

Proposal 5-13. *Research in farm economics*

A new Farm Economic Section should be created in 1964 to undertake research in the economic aspects of farming. This section should work with research officers in the department in advising on experiments and trials so that they produce results which show the most profitable practices. The Section should conduct studies with the co-operation of farmers in order to ascertain costs and to develop analysis on agricultural production, marketing, land use and farm management. The services of a foreign specialist are required to assist in the implementation of this program.

Expenditure required (JD's)

	1964	1965	1966	1967	1968	1969	1970
Research specialist	—	—	1,440	1,440	1,440	1,440	1,440
One assistant research Officer	—	—	600	600	600	600	600
Other	—	—	500	500	500	500	500

Continuation and expansion of existing research projects

Among the most important of the existing projects are the following :

1) Biological and seasonal history investigations of the olive fly in relation to methods of control.

2) Improvement of banana culture in the Jordan Valley.

3) Oilseed investigations, with particular emphasis on sunflower.

4) Life cycle of fig scale and methods of control.

5) Study of citrus root stock compatibility and adaptability to the various citrus varieties.

6) Control of red spider on citrus and egg plants.

7) Water requirement studies for vegetable and horticultural crops.

8) Weed control by use of chemicals.

9) Investigation of potential new crops which may be feasible in Jordan, such as cut-flowers and sugar beets.

10) Fertility trials on various crops.

11) Testing of new varieties of vegetables and field crops.

12) Testing chemicals for disease and insect control.

13) Plant tissue tests for mineral deficiency and physiological disturbances in fruit and vegetable plants.

Proposal 5-14. *Legislative changes*

In order to insure the success of the research program and because of the important nature and function of the Research Department, it is essential that necessary legislation be promulgated to establish the Department of Research as a legally constituted Department attached to the Ministry of Agriculture. The Department of Research should be constituted so as to be administered as a discreet governmental unit with special administrative and financial laws and regulations with its own budget. A salary scale for the staff of the Department should be established in order to retain and attract qualified personnel to staff adequately the Department and to be able to execute the Research Program. This should be done in 1964.

AGRICULTURAL EXTENSION AND TECHNICAL SERVICES PROGRAM

Agricultural extension is an informal educational system based on the philosophy of helping farmers to help themselves by means of extending technical agricultural assistance in all fields of agriculture with the overall objective of increasing agricultural productivity and improving social and material living standards of farm families.

A successful extension and technical services program comprises : -

1) Practical solutions to farmers' problems; i.e. information from various sources but particularly from agricultural research.
2) An energetic well-organized staff of trained extension workers.
3) Sponsoring various agricultural projects that aim at improving present agricultural methods.
4) Providing technical services in certain fields of agriculture that cannot be provided by farmers themselves. Such services would involve carrying out national or regional campaigns and an efficient organization to conduct them.
5) Educating farmers through various information media available to the Agricultural Extension Department such as the agricultural magazine, bulletins, postcards, cinema, etc...

The means for achieving the overall objectives of the Department are as follows : -

1) Improving and developing the existing agricultural practices, and the introduction of modern methods based on the results of scientific research.
2) Development of agricultural plans with the help of all agricultural technicians.
3) Stimulation of public interest and the participation of village leaders in appraising and solving agricultural problems.
4) Co-operation with all organizations and institutes interested in rural development for the co-ordination of efforts aiming at raising the standards of living and incomes of farmers.
5) Encouragement of private agricultural vocations.
6) Participation in the solution of agricultural problems by the provision of services and by demonstrations.
7) Training agricultural technicians with the purpose of developing their "know-how" and upgrading their skills and capabilities.

Proposal 5-15. *Upgrading of Staff*

The Agricultural Extension and Technical Services Department comprises the following sections : -

1) Agricultural engineering and irrigation
2) Agronomy
3) Statistics
4) Plant protection and locust control
5) Animal husbandry
6) Horticulture
7) Vegetables
8) Agricultural information
9) Programs and training

The field staff in the various districts consists of 6 agricultural directors, 6 agricultural inspectors, 6 horticultural inspectors, 5 agricultural statistics inspectors, 6 field crop inspectors, 6 plant protection inspectors, 6 animal husbandry inspectors, 22 plant protection agents, 23 field crop and vegetables agents, 21 horticulture agents, 22 animal husbandry agents and 6 artificial insemination agents. Moreover, there is a center for training extension agents run by a director and 3 lecturers.

The staff of the Extension and Technical Services Department cooperate with agricultural teachers in villages and provide them with technical information, pamphlets and other means of information.

All agents have a secondary school agricultural education, but many lack practical training in the different fields of agriculture and methods of extension.

Out of the 57 technical employees of the department, 22 are university graduates, and 35 are graduates of secondary agricultural schools and need practical training and academic upgrading.

Training and upgrading of the Agricultural Extension Department staff is a pre-requisite for any expansion in the actual activities of the department. Aside from the in-service training which is presently undertaken at the extension training center at Beit-Hanina and in the near future at Wadi Yabes, the plant protection institute at Jubeiha and at the agricultural reserach stations, agents should be trained outside Jordan in specific subject matter fields according to the overall program needs.

The training program needed will be as follows :

	1964	1965	1966	1967	1968	1969	1970	Total
Technical training	8	3	4	4	4	3	3	29
Academic training	5	2	5	3	3	3	3	24
Vocational training at AUB	5	7	5	5	5	5	5	37

It is assumed that academic training will be for one or two years to enable participants to obtain M.Sc. or Ph.D. degrees while technical training in USA or at AUB should be for one year. Based on the above program, funds for fellowships, will therefore be required as follows (in JD's) :

1964	1965	1966	1967	1968	1969	1970	Total
20,000	16,000	21,000	18,000	18,000	16,000	16,000	125,000

Proposal 5-16. *Expansion of extension services*

The Department's organization comprises five inspectorates in each of Zerqa, Hebron, Salt, Jenin and Ma'an districts where no section inspectors work due to the lack of funds.

The program of work calls for :

1) Raising the standard of these inspectorates to directorates of agriculture as from 1966.

2) Appointing subject matter specialists in the fields of horticulture, agronomy, vegetables, plant protection and animal husbandry.

3) Increasing the number of extension agents in accordance with the following plan.

	1964	1965	1966	1967	1968	1969	1970	Total
Specialist								
Inspectors	—	—	8	8	4	—	—	20
Extension agents	—	—	4	4	4	—	—	12

Expenditure required (JD's)

	1964	1965	1966	1967	1968	1969	1970
Specialist inspectors	—	—	4,036	8,175	10,200	10,320	10,440
Extension agents	—	—	1,248	2,550	3,900	4,020	4,170

Proposal 5-17. *Information Section*

An information Section has already been established. The functions of the Information Section are :

1) to produce both research and extension publications for distribution to (1) farmers, (2) extension workers, (3) other research workers

2) to develop and maintain continuous information services for both press and radio

3) to produce visual and other teacher aids and references for use by extension workers at both the national and local levels

4) to train extension workers and other agricultural workers in the effective use of information methods in carrying out extension educational programs

5) to serve all divisions and departments of the Ministry of Agriculture in producing audio-visual aids and publications related to the work of these agencies

6) to design and develop publications and other information materials for the purpose of bringing about a better and more accurate public understanding of the importance of agriculture to the Jordan economy, and the role being played by agricultural research and extension in improving the efficiency of agricultural production.

The cost of this project for 1964, 1965 and 1966 is JD 54,830 and it will be financed by the United States Agency for International Development. Funds are already allocated, divided as follows :

Training	—	JD 6,634
Equipment and supplies	—	JD 12,929
Advisory service	—	JD 35,289

After 1966 the project can be carried by the Extension Department out of its regular budget.

Expenditure required (JD's)

	1964	1965	1966	1967	1968	1969	1970
Information material and printing press	3,500	2,600	4,000	3,000	3,000	2,000	2,000
Cameras and other equipment	—	—	—	—	1,500	—	—

Proposal 5-18. *Rural Development project in the East Ghor area*

As irrigation water is made available to the three sections of the East Ghor Canal area, it is necessary to develop an integrated program to ensure the most desirable economic and social development of the area. To this end, the East Ghor Rural Development Project was begun in 1963 under the direction of the Agricultural Extension Department, with participation by the Co-operative Central Union, the Department of Co-operatives, the Ministry of Health, the Ministry of Public Works, the East Ghor Canal Authority and the United States Agency for International Development. This project should be extended to cover all the areas to be irrigated in the Jordan Valley.

The present project will take the following forms :

a) an all-purpose community center at Wadi Yabes which will serve as a center for training extension personnel and for farmers' educational meetings and community activities

b) a multi-purpose co-operative at Wadi Yabes including :

1) a marketing service center
2) a supply service center
3) machinery rental and repair service
4) rental housing for co-operative employees

c) one or more livestock co-operatives
d) one or more marketing co-operatives
e) a health center to be managed by the Ministry of Health
f) water chlorination and filtration plant
g) engineering designs and construction of 300 km of farm-to-market gravel roads
h) training of co-operative employees
i) a veterinary services center

Total expenditure required (JD 000)

1964	1965	1966	1967	1968	1969	1970
236	90	130	100	100	100	100

Most of the funds required will be obtained from development grants and the revenue derived from the sale of PL 480 commodities.

Proposal 5-19. *Land Development in the East Ghor Area*

In the middle of 1963 the East Ghor Canal Authority has transferred its responsibility for land development and land levelling on farms and for extension work in the East Ghor area to the Agricultural Extension Department of the Ministry of Agriculture. The Department has created a special section to be responsible for the task of carrying out engineering and levelling work and design best possible methods for irrigation and drainage to be adopted in various units. A program has already been initiated in co-operation with the Co-operative Central Union for extending financial aid to farmers who are desirous to improve their land. This section will be under the supervision of the Ghor Agricultural Directorate which will undertake all its functions in the entire Ghor area, or have them expanded so as to comprise all irrigated lands in the kingdom in case results of work make it necessary.

Proposal 5-20. *Continuation and expansion of existing extension activities with special emphasis on farm management and soil analysis*

The prosposed new Economics Section of the Research Department (Proposal 5-13) will be called upon to furnish data useful in farm management and farm accounting. Special attention will be given to this field in extension, and advisory offices will be sought to provide training to extension workers.

In the program of upgrading the staff of the Extension Department (Proposal 5-11 above) two of the fellowships mentioned are devoted to farm management.

The Agricultural Extension Department will launch a program to emphasize to farmers the necessity of soil testing to indicate the level of soil fertility, salinity, and water requirements especially in the Jordan Valley. Testing will be done in laboratories operated by the Research Department (see Proposal 5-19 above).

Equipment, Materials, and Transportation

The Department is now adequately supplied with transportation (90 motorcycles, and 34 four-wheel vehicles). Projectors and other equipment and extension materials are in adequate supply.

HORTICULTURE SECTION PROGRAM

The Horticulture Section of the Ministry of Agriculture has six main functions :

1) study the suitability of various ecological regions for the production of olives and fruits

2) production and sale of seedlings of olives, vines and fruit trees from the eight nurseries operated by the Section

3) licensing, inspection and regulation of private nurseries engaged in the production and sale of various tree seedlings

4) establishment (on privately-owned land) of demonstration plots of vines, olives, and other fruit trees

5) carrying out a program of grafting wild olive trees in the Burma area

Jordan implemented a major program of planting vines and olives and fruit trees during the last few years; many of these will begin to yield for the first time during the plan period. About 370,000 additional dunums will be planted within the coming seven years, consisting of :

Olives	210,000	additional dunums
Vines	72,000	" "
Citrus Fruit	28,000	" "
Other Fruit Trees	60,000	" "
Total	370,000	

A considerable proportion of the area to be planted with olives, citrus, and other fruits will not start production before 1970. The following table shows the areas producing in 1964 and 1970, and those areas planted but not yet producing in 1970.

TABLE 2 Planted areas producing and non-producing during the Plan Period

	Area in production 1964 (000 du.)	1970 (000 du.)	Planted but not producing in 1970 (000 du.)
Olives	570	720	210
Citrus fruit	20	30	24
Vines	210	262	20
Other fruits	168	220	45
Total	968	1,232	299

The Horticulture Section and private nurseries will have to make available seedlings in a number commensurate with the above rates of expansion. Seedling production is expected to be as follows :

TABLE 3 Seedling Production (000's)

	1964	1965	1966	1967	1968	1969	1970	Total
Horticulture Section Production								
Grafted olives	120	205	200	170	160	150	150	1,155
Grafted vines*	140	300	300	500	600	700	700	3,240
Citrus	40	95	90	80	70	60	60	495
Other fruit trees**	75	75	75	75	75	75	75	525
Required from private nurseries								
Grafted olives	130	140	200	200	220	230	230	1,350
Citrus fruit	60	70	80	90	100	110	110	620
Other fruit trees	—	—	10	20	40	60	80	210

* Many farmers plant their own stock especially for interplanting with olives, and probably no more than 3,240,000 vines on American root stock (equivalent to 16,200 dunums) can be produced and sold.

** Not including almond or figs which are grown from seed and cuttings respectively.

The above production targets for seedlings should meet the requirements of Jordanian farmers.

Proposal 5-21. *Specialization of Government Nurseries*

At present all eight of the government nurseries produce several kinds of seedlings — olives, vines, several other fruits — without much specialization. To produce high quantity seedlings more efficiently, nurseries will have to specialize in the production of seedlings as follows :

Baqoura — citrus and dates
Jericho — dates and ornamental trees
Arroub — pome fruits
Walla — olives
Al Hussein — olives and American vine root stocks
Al Faisal — vines, olives, and some citrus in 1965
Kabatia — olives
Shu'eib — other fruit and ornamental trees

Proposal 5-22. *Development of Al-Faisal Nursery*

Development and expansion of Al-Faisal nursery on the Zerka stream to specialize mainly in the production of grafted vines and olives. This nursery was founded in 1963 and must become an important source of vines and olives for the considerable expansion in vine planting envisaged over the next seven years. This requires the construction of necessary buildings and other facilities.

Proposal 5-23. *Encouragement of Private Nurseries*

Encourage private nurseries and provide additional technical advice and supervision. The ACC will consider issuing loans at the rate of JD 50 per dunum to expand well-operated existing nurseries and establish new ones.

It is proposed that seedling production will be carried out entirely by the private nurseries and that the Ministry of Agriculture will withdraw progressively as the production of the private nurseries expands.

In view of the present production level of the private nurseries compared to that of Government nurseries, it is not likely that the Ministry of Agriculture will be able to withdraw completely from this activity during the period of the Plan.

Proposal 5-24. *Cooperative project to encourage fruit tree planting*

The Horticulture Section and the Central Co-operative Union will co-operate to plant 10,000 fruit, olives, vine and citrus trees annually, through co-operative societies in districts and sub-districts of Jordan.

Proposal 5-25. *Project for soil conservation and olive tree planting*

The Horticulture Section in co-operation with the World Food Program of the UN. will carry out a program aiming at soil conservation and the planting of olive, vines and almond trees in an area of 18,000 dunums during 1965 and 1966.

Meanwhile measures are underway for signing a new agreement to renew the former one for planting 36,000 dunums of fruit trees in Karak, Balka, and Irbid districts during the years 1967, 1968 and 1969.

Proposal 5-26. *Olives and Vines rejuvenation program*

The Horticulture section in co-operation with the Near East Foundation is now carrying out a project aiming at extending the areas planted with olives, vines, almond and other fruit trees in various districts of the kingdom at an average of 5,000 dunums per annum. The project shall continue until the end of the plan period.

The Foundation provides necessary transport for the project while the Horticulture section provides seedlings and technical assistance.

Proposal 5-27. *Establishment of a nursery at Tafileh*

It is proposed that a nursery should be established at Tafileh for the production of olive and vine seedlings and for the encouragement of fruit tree planting in the southern district.

Expenditure required over that of 1963 (JD's)

	1964	1965	1966	1967	1968	1969	1970
Faisal Nursery							
Nurseries Inspector	—	—	600	600	600	600	600
Vine-grafting station	—	—	3,000	1,000	1,000	1,000	1,000
Tafileh Nursery							
Superintendent	—	—	480	480	480	480	480
Buildings	—	—	2,000	—	—	—	—
Tractor and equipment	—	—	1,700	—	—	—	—
Labor	—	—	4,000	2,000	2,000	2,000	2,000

Government contributions with other foreign organizations in accordance with special agreements

a) Vine and olive trees rejuvenation projects (seedlings valued in JD's)
5,000 5,000 5,000 5,000 5,000 5,000 5,000

b) Soil conservation and olive tree planting project in JD's
10,600 17,200 35,000 35,000 35,000 35,000 35,000

c) Cooperative project for fruit tree planting (seedlings valued in JD's)
— — 10,000 10,000 10,000 10,000 10,000

AGRONOMY PROGRAM

The main activity of the Agronomy Section is the production and distribution of certified seeds of improved and tested varieties and the encouragement of the utilisation of certified seed, seed treatment and fertilizer application.

To carry out these programs, the Section operates three seed production farms which produce various certified seeds of wheat, barley, legumes, vetch and other cereals. It also operates 21 grading machines.

Proposal 5-28

Increase production and use of certified seed through the following actions :

a) Increase the production of certified seeds of wheat, barley and other cereals through the expansion of land areas presently utilized by the Agronomy Section. This will be achieved through purchase of land or the establishment of a new station at an important cereal producing area in Amman District.

b) Contract with private farmers for the production of certified seeds of wheat and barley. Seed produced will be sold to or exchanged with farmers.

c) The Research Department will undertake the production of foundation seeds and provide same to agronomical stations. The Department will also produce certified vegetable seeds.

Expenditure required over that of 1963 (JD's)

	1964	1965	1966	1967	1968	1969	1970
Two field inspectors	—	—	1,200	1,250	1,300	1,360	1,450
Labor	500	500	1,000	1,000	1,000	1,000	1,000
Land purchase, buildings, and equipment	—	—	11,500	9,000	2,000	2,000	2,000
Purchase of barley seeds	—	—	5,000	5,000	5,000	5,000	5,000
Equipment	—	—	10,000	500	500	500	500

AGRICULTURAL STATISTICS SECTION

This Section presently supervises all statistical work pertaining to :

1) Statistics of field crops, vegetables, and fruits.
2) Keeping special records concerning meteorological data.

3) Livestock statistics including modern animal breeding farms.
4) Statistics on forests.

In all its above tasks the section co-operates with the forestry and Veterinary Department and with the Animal Husbandry Section of the Agricultural Extension Department. By the end of each year this section prepares and issues an annual statistical report to be distributed to local government agencies and other interested bodies abroad. The method adopted for collecting statistical data depends on enquiries by extension agents to village mukhtars and to notable farmers concerning areas planted, production, and livestock numbers in all villages. The experience of previous years proved that the existing method of collecting data is inadequate and leads to inaccurate results as extension agents do not complete the proper investigation due to the lack of transportation means or because they are involved in agricultural activities other than the collection of the statistical data. Moreover, farmers in some cases are reluctant to give the correct answers to the questions addressed to them.

Proposal 5-29. *Substitution of the traditional statistics method by the sampling method*

This proposal aims at attaining more accurate data that compare favourably with those of developed countries and at applying the recommendations of the UN. Food and Agricultural Organization concerning sampling. The Agricultural Statistics Section shall co-operate with the Department of Statistics in using the sampling method for collecting data on field crops, vegetables and fruits. This process must be accompanied by crop cuttings for appraising production of staples. Number of animals and poultry in the Kingdom must also be obtained through the sampling method.

It is difficult to estimate the expenditure incurred by the application of this sampling method until a pilot survey is performed. Therefore it is advisable to allocate annual amounts in the budget starting from fiscal year 1966/67 on the basis of the studies which would be conducted by this section and the Department of Statistics.

Expenditure required (JD's)

	1964	1965	1966	1967	1968	1969	1970
Statistician	—	—	600	600	600	600	600
Clerk	—	—	300	300	300	300	300
Equipment for crop cutting	—	—	1,200	1,200	—	—	—

LIVESTOCK AND POULTRY PROGRAM

During the period 1959/61 the average yearly slaughtering of locally produced sheep was valued at JD 670,000, of goats at JD 360,000, of cattle at JD 260,000, of camels at JD 200,000, and of poultry at JD 160,000. During the same period the average yearly imports of livestock, poultry and meat were as follows : sheep JD 550,000, goats JD 600,000, cattle JD 70,000, meat and meat products JD 180,000, and poultry meat JD 30,000. About 40 per cent of the total value of domestic consumption is imported.

The Seven Year Program calls for an increase in the production of lamb and mutton both through a four per cent per year increase in numbers of sheep and an increase in average carcass weight from the present low weight of 12 Kg. to 15 Kg. by 1970. The number of goats must be reduced by 20 per cent during the period in order to limit overgrazing and promote the program of soil and water conservation.

No increase is expected in the number of baladi cattle although it will be possible to raise their carcass weight. Milk cows, however can be considerably increased provided that green fodder is introduced in the cropping pattern of newly irrigated areas. The number of camels is expected to continue declining during the period.

Special attention will be paid to the production of poultry meat — because of its very favourable feed to meat conversion ratio relative to that of sheep, goats or cattle. Considerable advances have been made in recent years in the production of broilers on a commercial basis.

Egg production will be expanded to meet domestic requirements. Presently there is an annual shortage of (20) milllion eggs. Consumption is expected to increase by 18 million eggs by 1970 as a result of increased population and higher living standards. The plan thus must aim at an annual increase of (38) million eggs which means raising 200,000 layers in 100 specialized farms. This program necessitates additional allocations by the Agricultural Credit Corporation of JD 1,200 per farm with each farm containing at least 2000 layers.

Proposal 5-30. *Promotion of meat production in the Ghor Area*

Forage production plus sheep and beef fattening for meat production fit admirably into the farm plans of the Ghor area.

Based upon results obtained by the research project (proposal 5-8) which is designed to ascertain the most profitable use of forage among dairy cattle, beef or sheep, the Animal Husbandry Section in co-operation with the Extension Department and co-operatives should launch a strong campaign to induce farmers of the area to produce livestock.

One livestock-feeding co-operative is presently being established in the East Ghor area. If the results of this pilot project are favourable, other similar projects should be encouraged.

Proposal 5-31. *Forage and meat production in special desert range areas*

One of the most acute problems of the desert range areas of Jordan is the occurrence of successive years of drought, causing hardship and losses to livestock particularly to the flocks of sheep which are the main stay of the Bedouin tribes in the area.

A joint project of the Central Water Authority, the Research Department and the Animal Husbandry Section to investigate the availability of underground water, soil analysis and land reclamation and development, has already started in the southern part of the country at Jafr on a pilot project basis. This activity should be expanded and speeded up during the period of the plan to cover additional promising areas. Only sheep husbandry should be promoted in reclaimed areas. Reclaimed lands are to be devoted to fodder production in order to establish reserves of feed to insure against periods of drought and to provide supplementary feeding for fattening of sheep for slaughter.

Only owners of livestock who are willing to continue this practice should be eligible for land ownership in reclaimed areas.

A joint project of the U.N. World Food Program and the Government of Jordan is being initiated in 1964 with the following objectives :

a) settlement of 70 Bedouin families at Jafr

b) establishment of a feed reserve and supplementary feeding of sheep in the southern area of Jordan.

Two other pilot projects will be initiated for the settlement of Bedouins at Qatrana and Sultani Areas in 1965.

Government contribution toward this project will be as follows :

Expenditure required (JD's)

	1964	1965	1966	1967	1968	1969	1970
Capital Expenditure							
Buildings & Construction	2,400	2,400	8,000	3,000	3,000	—	—
Machinery	—	3,100	1,400	3,000	2,000	—	—
Recurrent Expenditure							
Labor	8,000	12,000	8,000	6,000	5,000	4,000	4,000
Transport of W.F.P. Commodities	—	12,000	6,000	9,000	9,000	9,000	9,000
Others	2,000	4,000	2,000	2,000	2,000	2,000	2,000

The World Food Program will provide about JD 128,000 worth of feed and food during the period 1964 and 1965. The JD 30,000 of transportation cost is provided to cover the transportation of WFP commodities.

Proposal 5-32. *Promotion of Poultry meat production*

An increase of 200 per cent in poultry meat production is projected for 1970 over that of 1959/61. In order to achieve this target two development programs are to be implemented.

1) A substantial increase in the production of day-old broiler chicks must be achieved. At present Jordan imports approximately 400,000 one-day old chick per month at a total annual cost of about JD 240,000; local production is about 200,000 chicks per month.

To meet the over-expanding demand for broiler chicks, five commercial hatcheries have been established. Two more hatcheries are needed to meet the requirements of present consumption and of expected increase of same. Otherwise the capacity of present hatcheries must be increased. The total cost including land, buildings, parent stock, equipment and transportation is estimated at JD 20,000 per unit. Encouragement through long-term loans made avialable by ACC is necessary.

2) Improve and expand the existing broiler raising farms and establish new ones. ACC loans at an average of JD 15,000 per year will be required for this program.

Proposal 5-33. *Promotion of egg production*

Approximately 20 million eggs were imported in 1964 with a total value of JD 200,000. In order to cover this deficit in egg production and to meet at least the expected increase in egg consumption, egg production must be increased from 90 million in 1962 to 128 million by 1970.

This target can be achieved through :

1) Increasing the number of specialized egg production farms, to accommodate an additional 200,000 layers. The total investment required for such a program is JD 180,000. ACC medium-term loans should be made available to encourage this program.

2) The Animal Husbandry Section should encourage a small number of farmers to produce hatching eggs of improved laying hens for commercial sale to hatcheries and thus of chicks for commercial egg production.

3) Improvement of the productivity of local fowl through crossing with improved breeds. The Animal Husbandry Section must produce 36,000 month-old chicks of improved strains annually for sale at cost price to farmers in villages. For this expansion present production at Arroub, Irbid and Wadi Wala centers must be increased accordingly. Investment required for this expansion is as follows :

(JD's)

	1964	1965	1966	1967	1968	1969	1970
Breeding stock	—	3,000	3,000	—	—	3,000	3,000
Two electricity generators	2,000	—	2,000	2,000	—	—	—
Buildings and electricity	1,500	1,000	2,500	1,500	—	—	—
One pick-up	—	—	800	—	—	—	—
Overhead	600	500	500	500	500	500	500

Proposal 5-34. *Dairy cattle promotion*

Jordan's imports of dried milk and milk products amount to approximately JD 400,000 per year representing about 20 per cent of total consumption.

Good progress has been made recently in the dairy industry. The number of modern dairy farms increased from 198 in 1962 to 400 farms in 1964. Loans made by ACC to farmers for this purpose were the chief incentive for such development. In 1962, JD 42,000 were issued to farmers for importing Friesian dairy cattle from abroad. This program will be continued and expanded during the period of the Plan.

Although the dairy industry in Jordan depends mainly on Friesian herds centered around big cities, an adapted and productive type of cattle is necessary for meeting the expected demand for milk and milk products in local markets. The Shami breed has shown an adequate degree of adaptation to the lower levels of nutrition and husbandry prevailing among small holders and villagers.

Along with the expected expansion in the numbers of Friesian cattle, production and distribution of off-spring of Shami breed to farmers in upland areas, and in the Jordan Valley must be expanded to up-grade Baladi cattle by cross breeding. It is proposed that 50 heads should be added to the Shami herd at Deir Alla to provide calves and heifers for distribution to farmers and natural insemination centres.

Expenditure required over that of 1963 (JD's)

	1964	1965	1966	1967	1968	1969	1970
Insemination centres	—	—	685	760	420	440	460
Breeding stock	—	—	7,500	7,500	—	—	—
Feed	—	—	3,000	3,000	3,000	3,000	3,000
Overhead	300	300	600	600	600	600	600

Continuing Services

a) Artificial Insemination Service

There are at present five centres for artificial insemination of cattle (5 Friesian bulls) and three for natural breeding, (2 Shami and 2 Friesian bulls). This program designed to up-grade the quality of cattle, should be continued and expanded.

b) Free hatching service

Free hatching service is provided in five centers to which farmers may bring eggs for hatching; this program should be continued until replaced by private enterprise.

Expenditure required (JD's)

	1964	1965	1966	1967	1968	1969	1970
Labor	—	—	1,200	1,200	1,200	1,200	1,200

PLANT PROTECTION PROGRAM

The program for developing plant protection activities aims at giving high priority for conducting studies and surveys of important plant diseases and insects and methods for controlling them. This program will be carried out by the Plant Protection Institute in cooperation with the Research Department. The program also aims at expanding demonstration work and other services in accordance with the following plan :-

1. *Studies*

   a) Survey of major insects and plant diseases that inflict losses on crops, and the determination of the most appropriate time for controlling and methods of preventing their expansion.

   b) Conducting field trials and experiments on the various pesticides and fungicides for controlling plant diseases, and insects. The results obtained will then be disseminated to farmers through extension agents.

2. *Demonstrations*

   a) Carry out field demonstrations to display the effectiveness of dusting and spraying of various chemical pesticides, so as to induce farmers to adopt similar methods in controlling plant diseases on their own farms.

   b) Demonstration on the use of spraying machines to encourage farmers to acquire them and thus to control agricultural diseases by themselves.

3. *Services*

   a) Dusting and spraying various agricultural crops for controlling pests and diseases. The Plant Protection Section will be paid for providing sprayers and technicians for such operations.

   b) Undertaking collective spraying programs to control and/or eradicate certain insects among which are the olive fly, the fruit fly, citrus scale insects, spiders on various crops, and wheat leaf miners.

   c) Publishing seasonal pamphlets and bulletins on plant diseases and insects during the time of their appearance and making them available to extension agents and farmers. Meanwhile, the utilization of other mass communication media such as broadcasting and local press should be intensified so as to give comprehensive information about the various diseases, their symptoms, methods of control, and the appropriate chemicals to be used.

4. *Plant Quarantine*

a) Inspection of exported and imported agricultural commodities in accordance with the Plant Quarantine Laws and the issuance of certificates to exported agricultural commodities.

b) Fumigating infested exported and imported agricultural commodities at Ramtha Agricultural Plant Quarantine Station.

c) Establishing an additional agricultural Plant Quarantine Station at Ain Ghazal.

Requirements

The achievement of plant protection programs requires the following employees and equipment : -

a) Additional plant protection specialists during 1966 and 1967.

b) The appointment of one plant protection agent in each district of the Kingdom as from 1965 to be responsible for the implementation of district programs of the Plant Protection Section. The required staff personnel will be selected from the trained staff of the Ministry of Agriculture. The required number of inspectors for each district, will have to be appointed.

c) In addition to facilities provided by the German Agreement, there is still need for more mobile spraying machines and a small increase in transport facilities.

Expenditure required over that of 1963 (JD's)

	1964	1965	1966	1967	1968	1969	1970
Specialists	—	—	600	1,200	1,200	1,200	1,200
Field assistants	—	720	1,440	2,160	2,880	3,600	4,320
Equipment	1,800	1,500	2,300	2,300	2,200	2,200	2,200
Establishment of two agricultural plant quarantine stations	9,000	15,000	2,000	—	—	—	—

VETERINARY SERVICES PROGRAM

The Veterinary Department of the Ministry of Agriculture provides all of the veterinary services in the Kingdom through 19 veterinarians and 26 livestock inspectors. There are no private veterinarians practising in Jordan. At present the Veterinary Department operates two mobile clinics (four more are expected in 1964) for the more scattered animal population and a widespread program of vaccination.

Expanding livestock production will result in growing importance and expanding responsibilities for the Veterinary Department.

The Department has responsibility for certain aspects of fishing, but these will be dealt with under Fisheries Section below.

Objectives

1) Expansion of activities and services in the field of animal disease control to cover the whole animal population in Jordan, and to operate six mobile clinics to work in the different districts and the desert area. Four mobile clinics have been sought from the United Nations.
2) Control of animal diseases transmitted to man, and initiation of a program for tuberculosis eradication in milking cattle.
3) Initiation of a program of tick eradication.
4) Expansion of animal disease vaccine production.
5) Establishment of a veterinary hospital in Amman area and ten veterinary clinics in other districts.
6) Expansion of the present animal quarantine buildings to accommodate imported livestock.

Proposal 5-35. *A program for tuberculosis eradication in milk cattle*

This program of tuberculosis eradication among dairy cattle will be implemented in 1966 by the Veterinary Department, and should be completed by the end of 1970. The program involves T.B. testing of all animals and the slaughtering of all those infected. A special regulation will be enacted to secure fair compensation for owners of slaughtered cattle.

Proposal 5-36. *The program for the prevention of the contagious abortion disease*

This program calls for the vaccination of all heifers of improved stock between 4-8 months of age. A special regulation for this purpose will be enacted.

Proposal 5-37. *The construction of a veterinary hospital and veterinary clinics*

It is proposed to establish a veterinary hospital which will be operated by the Veterinary Department and ten veterinary clinics in the main animal breeding areas throughout the country.

Proposal 5-38. ***The establishment of an Animal Health Institute***

This proposal calls for the establishment of an institute for animal health in co-operation with the Near East Regional Animal Health Institute. Among the main tasks of the Institute are the following : -

a) Production of various vaccines needed for controlling animal and poultry diseases. The following types of vaccines will be produced during the plan period.

1) Anthrax vaccine
2) Sheep and goats pox vaccine
3) Haemorogic Septismia vaccine
4) Lung worms vaccine
5) Newcastle vaccine for both poultry and chicks
6) Hen pox vaccine
7) Poultry cholera vaccine
8) Poultry typhoid vaccine

and any other vaccines that can be produced within available possibilities and as need necessitates

b) Establishment of special divisions for dissection, parasitology and infectious diseases.

c) Upgrading of technicians theoretically and practically in veterinary work.

Proposal 5-39

Expansion of the present animal quarantine centres and providing them with the necessary facilities.

Staff Requirements

1. *Veterinarians*

The implementation of the program for veterinary services requires 50 veterinarians to be employed by the Veterinary Department by 1970. The following table details their number for each year of the Plan.

1964	1965	1966	1967	1968	1969	1970
21	26	32	37	42	47	50

2. *Livestock Inspectors*

By 1970 the present number of inspectors must be doubled. Starting 1965, all new inspectors should be graduates of a secondary level veterinary school. The total required number of inspectors is as follows : -

1964	1965	1966	1967	1968	1969	1970
29	32	42	52	60	65	70

3. *Training and Fellowships*

a) 8 fellowships are required to provide the Department with specialized personnel in the following fields : -

1) Bacteriologist (to get M.A. degree in research), and six months training in the preparation of veterinary vaccines.
2) Pathologist
3) Parasitologist
4) Blood parasites
5) Animal epedimics
6) Animal infectious diseases
7) Ticks
8) Inland water fish breeding

b) Twenty four scholarships for Damascus Veterinary School are required during the period of the Plan to provide the Department with a cadre of well qualified livestock inspectors :

Timing of Scholarships should be as follows : -

1964	1965	1966	1967	1968	1969	1970
2	2	4	4	4	4	4

Additional expenditure required over that of 1963 (JD's)

	1964	1965	1966	1967	1968	1969	1970
1) *Staff*							
Veterinary surgeons	1,440	5,040	12,100	17,200	22,300	27,500	31,000
Livestock inspectors	900	8,800	4,800	7,800	10,200	11,700	13,200
Scholarships to Damascus	—	800	1,200	1,200	1,200	1,200	1,200
Veterinary school	—	800	1,200	1,200	1,200	1,200	1,200
Training abroad	—	—	4,800	4,800	4,800	3,600	3,600

2) *Capital Expenditures (JD's)*

Expansion of animal quarantine buildings	2,500	1,000	6,000	6,000	—	—	—
Veterinary hospital and equipment	—	—	—	17,000	14,000	2,000	2,000
Veterinary clinics	—	50,500	20,000	10,000	10,000	8,000	8,000
Vehicles	1,500	—	1,000	1,000	1,000	1,000	1,000

3) *Special Projects (JD's)*

Tuberculosis and abortion diseases eradication	—	—	5,000	5,000	10,000	10,000	10,000
Tick eradication	—	—	2,000	3,000	3,000	3,000	3,000
Government contribution in Animal Health Institute (Building)	—	—	30,000	—	—	—	—

FISHERIES PROGRAM

Marine Fishing

Jordan's coastal area is only about seven kilometers on the Gulf of Aqaba, and as its territorial waters are not capable of supporting a commercial fishing operation, Jordan's fishermen have operated down the Gulf close to the junction of the Gulf and the Red Sea. Fishing operations are by small crews of 4-6 men operating in small boats which depend on ice for refrigeration. Fish are sold to the Jordan Fisheries Company, which operates a cold storage warehouse at Aqaba and a wholesale distribution business.

Landings have increased from 50 tons in 1958 to 185 tons in 1962. About 120 fishermen and 45 boats were engaged in fishing in 1962. Jordanian imports in 1962 were 370 tons of fresh fish, 235 tons of dried, smoked and salted fish, and 873 tons of preserved or prepared fish, all of which had an import value of JD 285,000. A considerable number of studies of Jordan fish production and marketing have been conducted, all indicating a potentially large and economically sound industry.

Objectives :

1) Increase in Jordanian catch as follows :

	1964	1965	1966	1967	1968	1969	1970
Tons	400	700	950	1,000	1,100	1,200	1,300

2) Improvement in grading and distribution so that Jordanian fish will largely replace imported fish and provide an alternative protein diet cheaper than that obtained from meat. Quality must be improved and prices kept down.

Proposal 5-40. *The purchase and operation of medium size boats in the Red Sea*

According to the studies conducted by foreign experts, it is apparent that marine fish production can be increased substantially only by the introduction of fishing boats of about 10 to 20 tons refrigerated storage capacity operating in the Red Sea, as opposed to the Gulf of Aqaba. An agreement was signed with Saudi Arabia in 1963 giving Jordanian fishermen the right to fish in Saudi territorial waters and to use Saudi shores as required for medical attention, supplies, and shelter.

It is proposed that one fishing boat of about 10 to 20 tons refrigerated capacity be put into service in 1964 and similar boats added in 1965 and 1966 as experience is gained and crews trained. Ownership of the fleet must be either by the present Jordan Fisheries Company (with increased investment by the government and private sources) or by a new company in which the government will own a majority of shares. It is proposed that the government reconstitute the Jordan Fisheries Company, providing all of the additional capital necessary, and taking over active control of the company in 1964. The Jordan Development Board and the Ministry of National Economy must take responsibility for re-organization and financing of the company.

Requirements	1964	1965	1966	1967	1968	1969	1970
Skippers and assistants	2	4	6	6	6	6	6
Engineers	2	4	6	6	6	6	6
Investment required (JD 000's)							
Ships and gear	60	60	60	—	—	—	—

Proposal 5-41. *Improvement in handling and marketing*

a) The new company must increase cold storage facilities at Aqaba from the present 200 tons to 300 tons by 1970

b) One refrigerated truck of 10 tons capacity will be required in 1965 and a second truck of about 12 tons capacity will be required in 1966.

c) Wholesale and retail centres must be built or extended by the Company in Amman and Jerusalem, and smaller distribution outlets built in Nablus, Hebron, Zerka and Irbid.

d) The company must introduce grades and grading, and undertake a limited program of promotion in regard to those species of fish not presently popular in Jordan, but in plentiful supply.

Proposal 5-42. *Legislation, Agreements and Protection*

a) Revision of the 1943 "Fishing Regulations Law" in the light of new requirements. Revision should be undertaken by the Ministry of National Economy and the Jordan Development Board.

b) A long-term agreement, if possible, with Saudi Arabia concerning fishing in Saudi Arabian territorial waters is considered essential for initiating the project.

c) Agreements, if possible with the United Arab Republic, Sudan, Somalia, and Ethiopia similar to the agreement of 1963 signed with Saudi Arabia. Such agreements should clarify the rights and responsibilities of Jordanian fishermen inside foreign territorial waters.

d) For the first few years, local production will have to receive limited protection from imports of directly competing produce. Such protection should not be necessary after the new program is established.

Inland Fishing

As outlined in Proposal 5-10 above, the Research Department of the Ministry of Agriculture is conducting research on inland fisheries at Wadi Yabes in the Jordan Valley. The purpose of these studies is to provide information and technical assistance to fish farmers in the Jordan Valley and at Azrak.

The Agricultural Credit Corporation shall grant the loans required for the establishment of fish ponds, in case the studies being conducted prove successful.

FORESTRY AND SOIL CONSERVATION PROGRAM

For centuries the forests and grazing lands of Jordan have been subjected to heavy pressures which have resulted in the disappearance of natural forests over large areas and in the reduction of ground vegetation through over-grazing and cultivation. Removal of the protective cover of vegetation has contributed to soil erosion on such a scale that much of what was once agricultural land now consists of barren, exposed rock. The shortage of agricultural land, partly from the events of 1948, partly from population pressures, and partly from soil erosion, has led to the cultivation of marginal land on the edge of the desert and on slopes in the higher-rainfall areas which are excessively steep for agriculture. This is causing further soil erosion at an ever-accelerating rate. At the same time, the area of national forest has been so reduced that it now makes only a token contribution to Jordan's annual consumption of timber and timber products.

The Department of Forestry of the Ministry of Agriculture has planted about 35,000 dunums (3,500 hectares) with forest trees since its formation in 1948 but has also created a substantial nursery system capable of supporting greatly increased plantings. The Department has been, and still is, handicapped by a lack of professional staff and this has severely limited work in its main fields of responsibility, i.e. forestry, conservation and range management. Equally, it has been handicapped by a lack of adequate and regular budgetary support.

Jordan annually imports over two and a half million dinars worth of wood and wood products. While the importance of soil and water conservation in Jordan is fully recognized the role of the Forest Department in this respect, outside of the lands placed directly under its control, should be primarily of advisory nature. The Forests Department will concentrate its efforts on the improvement and extension of the forest resources of the country.

The Forest Department, with the assistance of the UNSF/FAO Forestry project, should draw up proper plans for watershed management areas and render necessary advice on the proper execution of engineering and other techniques. In the execution of the plans, the primary responsibility of the Forest Department shall lie in the conservation of forest and waste lands and for the proper management of already forested areas within these watersheds. The treatments prescribed should be such as to result into the optiumum utilization of soil and water resources with minimum of soil erosion and should be consistent with the resources of the country.

Within the framework of the watershed management plans, the responsibility for water conservation should lie with the Central Water Authority and the improvement of agricultural lands should be undertaken jointly by the Agricultural Extension Department and the FAO Dry Land Farming project. The Forest Department shall act as the central coordinating agency. The model plans prepared by the UNSF/FAO Forestry Project in Wadi

Ziglab during the first year of its operation will be used as a guide for work to be carried out by the staff of the Forest Department in the other side-wadis of the East Ghor Canal.

As a result of the two Arab Summit Conferences, the importance of the Yarmouk project can hardly be over emphasized. The Forest Department, with the assistance of the UNSF/FAO Forestry project, should immediately undertake a catchment survey of the Yarmouk region, covering both state and private lands, producing not only recommendations as to areas to be afforested but comprehensive recommendations for changes in land use patterns (including specific practical suggestions for methods of achieving them). The Forest Department together with a representative of JDB will prepare a program of work to be carried out in the Yarmouk catchment during the period of the Development plan and will present the cost estimates to the JDB as soon as they are ready for emergency allocation of funds.

The Forest Department is also responsible for range management. This will involve selective afforestation, watershed management, introduction of soil conservation farm practice and grazing control measures on a country wide basis.

Proposal 5-43

Adequate and reliable statistics are the key to proper development planning. The Department of Forests, with the assistance of the UNSF Forestry project, will, therefore, undertake to improve :

a) The overall forestry statistics including forest inventory of existing forest resources, and

b) The techniques and methods of collecting and maintaining forestry statistics in line with international standards.

As an aid to the preparation of proper planting program, consistent with the present and future raw material requirements of the country, the Forest Department, with the assistance of the UNSF Forestry Project, will undertake the following studies :

1. Study of present and future requirements of wood and wood products.
2. Feasibility studies of :
   a) Match industry. (This industry is already in existence).
   b) Plywood industry
   c) Paper and paper board industry. A factory is already under construction in Zerqa. Its present plans are to use straw and waste

paper as raw material. In the near future, if it can be made available, they would prefer to use wood for pulping. They anticipate their initial daily requirements at 100 tons of poplar wood or 200 tons of eucalyptus

d) Reed board industry

3) Special studies will be made in Ghor Safi to see if the area can be developed as a single integrated industrial complex based on wood as raw material

4) A survey will be undertaken to estimate the potential production of wood products :

a) From irrigated agricultural and horticultural lands in East Ghor and other parts of the country from linear plantations along the edges of fields, irrigation channels, roads and paths etc. This should be given high priority as this will enable the country to increase her wood production without taking any productive land out of production already under other land uses

b) From tree crops which might be grown as nurse crops for seasonal or perennial agricultural crops. In 1963 considerable damage was done to the banana crops by frost. The Department of Forests should study and suggest the appropriate species which could be used for the purpose

5) The Department of Forests, in consultation with the East Ghor Canal Authority, will map and demarcate suitable areas for the utilization of water at the tail end of the canal for raising irrigated block forest plantations. The amount of water available at the tail end of the canal is seldom enough for agricultural or horticultural crops but tree crops can be successfully grown

Cost of the Studies : Estimated at JD 2000

Financing : From the normal budget of the Department of Forests

Proposal 5-44

Over the period of the Seven Year Plan, an average of 35,000 dunums (3,500 hectares) of the forest trees are to be planted each year in the areas which would yield optimum returns in the shortest possible time. The planting program should be geared to meet the requirements of the country for wood and wood products for private as well as industrial consumption

(See proposal 5-44 above). The planting program should be split into two parts, namely long-term and short-term. The former should include the planting of industrial conifers, e.g. Pinus radiata, and the gradual conversion of degraded broad leaved forests into better quality coniferous or mixed forests. The short-term planting program should consist of linear and block plantations of quick growing species and where conditions permit this should get priority over the former.

There is already a tanning factory in operation in the country. Its requirements of tanning materials are met by imports from abroad. In afforesting the denuded lands which are considered suitable for water harvesting measures in the catchment area, the planting program should include the planting of species with high tanin content.

The area to be planted in 1964 will be 15,000 dunums only (due to limitation of nursery stock) but this figure will be increased year by year as the resources of the Forest Department are increased. It is virtually impossible to forecast an exact acreage for each years' program because of the limitations imposed by the climatic conditions of Jordan. Measures in support of this program will include :

a) The completion of studies listed in proposal 5-43

b) An ecological study to provide a list of afforestation sites in order of priority. This planting program will be prepared as part of the Forest Management studies to be carried out by the United Nations Special Fund Forestry Project which will be in operation in Jordan from 1964 to 1967. The following considerations will govern the choice of planting sites

1) Suitability of climate, particularly rainfall
2) The necessity for soil and water conservation
3) The necessity for flood control and protection of agricultural land

c) The production of high quality, low-cost seedlings in quantities necessary for the afforestation program and for private tree-planting activities. The requirements for seedlings for government and private planting are shown in Table 6. The greater part of these requirements will come from government nurseries during the period of the plan but it is anticipated that eventually commercial nurseries will be developed to supply the seedlings required for private planting

d) Encouragement of private forestry (through co-operation with the Agricultural Extension Department) especially the cultivation of poplars in irrigated areas and the development of windbreaks and shelter belts on agricultural land

e) Research and practical field trials to be conducted on the introduction of more productive exotic tree species

f) Amenity planting to be carried out in areas such as Jerash and the approaches to Petra for the benefit of the tourist industry

Total expenditure required (JD 000's)

	1964	1965	1966	1967	1968	1969	1970
Afforestation	37	50	100	100	100	100	100
Administrative Overhead	29	31	34	37	40	44	46
Buildings	3	3	3	3	3	3	3
Vehicles	3	2	2	2	1	2	2
Scholarships	2	3	4	3	4	2	1
Special Fund projects	5	4	1	—	—	—	—
Total	79	93	144	145	148	151	152

Proposal 5-45. *Protection, maintenance, and improvement of existing forests*

There are about 500,000 dunums of indigenous forest in Jordan. These areas must be protected against grazing, fire, and illicit cutting. To these 500,000 dunums of indigenous forest there will be added each year the areas of newly-established plantations created under the afforestation program. This will steadily increase the area requiring protection and at the same time silvicultural operations such as pruning and thinning will have to be carried out on an ever-increasing scale.

Expenditure required (JD 000's)*

1964	1965	1966	1967	1968	1969	1970
32	35	41	49	57	65	73

* Covers watershed and range management as well as afforestation

Proposal 5-46. *Soil and Water Conservation in the watershed areas dominating the East Ghor Canal*

The areas of the watersheds involved are as follows :

Wadi Ziqlab	108 sq. km.
Wadi Rajib	88 ” ”
Wadi Arab	267 ” ”
Wadi Yabes	111 ” ”
Wadi Jurum	26 ” ”
Wadi Kufringe	111 ” ”
Wadi Sha'ib	185 ” ”
Wadi Kufrein	277 ” ”
Zerka River	200 ” ”
Yarmouk River	200 ” ”
Total	1,573 ” ”

The Program will include the following :

a) The control of grazing

b) The terracing of slopes, building of small check dams in erosion gullies and the planting of soil-binding trees and shrubs on steep hillsides in those areas where soil erosion is affecting agriculture or water supplies.

c) The promotion of farm practices which conserve soil and prevent run-off, within those areas covered by (b) above, through co-operation with the Agricultural Extension Department

d) The detailed planning of watershed management measures required in the area (this is an important feature of the Special Fund Forestry Project)

Expenditure required (JD 000's)

	1964	1965	1966	1967	1968	1969	1970
Watershed development	80	90	90	90	90	100	110
Administrative overhead	15	16	17	19	20	22	23
Buildings	3	3	3	3	3	3	3
Vehicles	2	1	1	1	1	1	1
Scholarships	3	3	3	4	2	1	—
Total	103	113	114	117	116	127	137

Proposal 5-47. *Improvement of Range Management*

The Range Management program will include the following measures :

a) The development of improved pastures and fodder crops based on the work of the Agricultural Research Department. (See program of Research Department. Research on range lands, pastures and forage crops should be the responsibility of the Research Department of the Ministry of Agriculture)

b) The control of grazing and ploughing of natural range land, especially in areas of 150-250 mms of rainfall where steppe vegetation predominates

c) The continuation of experimental work on the conservation of natural range land and its use for rotational grazing

Expenditure required (JD 000's)

	1964	1965	1966	1967	1968	1969	1970
Administrative overhead	14	15	17	18	19	21	23
Vehicles	1	2	1	1	—	1	1
Scholarships	1.8	3.6	3.8	3.4	4	3	1.4
Total	16.8	20.6	21.8	22.4	23	25	25.4

Requirements to Achieve Objectives

1. *Staff*

It is estimated that, by 1970, the following staff will be required for the Department :

9 University graduates

31 Technically-trained staff (i.e. men who have taken the two-year training course at the Near East Forest Rangers School or a similar institute).

The qualified staff in the Department at present consists of :

1 University graduate (qualified in Range Management)

10 Technically-trained staff

During the period of the Plan, therefore, an extra 8 graduates and 21 technicians will have to be recruited and it is proposed that this shall be done by providing scholarships for overseas study for suitably-qualified candidates. It is proposed that these scholarships shall provide specialised training as follows :

	1964	1965	1966	1967	1968	1969	1970
Graduates							
Forestry	1	1	1	—	—	—	—
Conservation	1	1	1	—	—	—	—
Range Management	1	1	—	—	—	—	—
Technicians	5	5	4	4	3	—	—

(The year indicates when training will commence and scholarship funds will be required)

In addition, training fellowships (refresher courses) will be required for Department staff and it is anticipated that one such fellowship will be required during each year of the Plan.

It has been assumed that graduate training is for five years and technical training for two years and that graduate training will cost JD 800 per man each year and technical training JD 400. Based on the above program, scholarship and fellowship funds will therefore be required as follows (JD's):

	1964*	1965	1966	1967	1968	1969	1970
Graduates	2,400	4,800	6,400	6,400	6,400	4,000	1,600
Technicians	3,600	4,000	3,600	3,200	2,800	1,200	—
Training fellowships	800	800	800	800	800	800	800
Total	6,800	9,600	10,800	10,400	10,000	6,000	2,400

* (The figure for 1964 includes the financing of students who commenced 2-year training courses in 1963)

2. *Transport*

Adequate transportation will be required for afforestation work and for the supervision of conservation projects.

The Department requires small 4-wheel drive vehicles for supervisory work, tractors and trailers for nursery work and 3-ton general haulage trucks for the transport of materials, stores and transplants. It is estimated that, when the Department is fully staffed, a total of 24 supervisory vehicles, four 3-ton trucks and 2 tractors will be required.

It is estimated that the cost of these vehicles will be distributed as follows (JD's) :

	1964	1965	1966	1967	1968	1969	1970
Four-wheel drive vehicles	4,200	3,000	4,200	2,400	1,800	3,000	3,000
Trucks	1,300	1,300	—	1,300	—	1,300	1,300
Tractors	800	800	—	—	—	—	—
Total	6,300	5,100	4,200	3,700	1,800	4,300	4,300

3. *Legislation and Taxation*

a) Legislation for the control of grazing and for the compulsory afforestation of private land is already in existence. Enforcement of this legislation must be carried out rigorously by the Department of Forestry

b) Areas planted to forest trees will continue to be exempt from land tax in order to encourage private owners to plant more trees

c) Tax exemption will be granted to landowners for carrying out approved conservation measures such as terracing and the building of small check dams

4. *Supporting Organizations*

a) A United Nations Special Fund Project will extend from 1964 to 1967 and bring four forestry experts and one range management expert to Jordan

b) There are several charitable organizations interested in tree-planting projects in Jordan. These organizations will be encouraged to implement such projects by the provision of seedlings from Forestry Department nurseries and by the provision of technical advice from Forestry Department staff. It is expected that, where large scale plantings are envisaged, the approval of the Department will be sought for the work proposed in order to co-ordinate both private and State afforestation schemes.

c) The Agricultural Credit Corporation and the Work-Wages Co-operatives have considerable credit facilities for terracing and tree-planting work. Their plans (see program for ACC) include the expansion of these activities

5. *Revenues and Assistance*

a) During the period of the Plan, revenue will be obtained from firewood sales as scrub forests are brought under improved management and these sales may be expected to yield about JD 20,000 each year. Apart from this, normal forest revenues, which amounted to JD 32,000 in 1962, may be expected to increase slowly as the area under forests increases

b) The UN Special Fund Forestry Project will finance four overseas scholarships and this will assist in financing the "Training Fellowships" outlined above

c) In view of the greater emphasis being placed upon Conservation and Range Management and also the likelihood of major projects developing in Watershed Management, it is desirable that overseas technical assistance should be sought for the continuity of work in these fields. It is proposed that one Watershed Management expert and Range Management expert should be recruited and that because of the long-term nature of their work they should be in Jordan for a minimum of four years. It would be desirable to recruit these specialists in 1966/67 in order to preserve the continuity of overseas technical assistance after the cessation of the Special Fund Forestry Project in 1967

TABLE 4 Estimated Areas of Forest Development (Dunums 000's)

	1964	1965	1966	1967	1968	1969	1970
A. Area to be planted each year, (Afforestation)	15	20	40	40	40	40	50
B. Area of plantations to be maintained each year (Maintenance)	35	50	70	110	150	190	230
C. Area of indigenous forest under protection and management (Protection)	500	500	500	500	500	500	500
D. Total area of State Forests (B & C)	535	550	570	610	650	690	730

TABLE 5 Estimated Cost of Forestry Program (JD 000's)

A. *CAPITAL EXPENDITURE*	1964	1965	1966	1967	1968	1969	1970
1. Afforestation	37	50	100	100	100	100	120
2. Buildings	6	6	6	6	6	6	6
3. Vehicles	6	5	4	4	2	4	4
4. Watershed Development	80	90	90	90	90	100	110
5. Scholarships	6.8	9.8	10.8	10.4	10.5	6	2.4
6. Special Fund Contribution	4.6	3.7	1.2	—	—	—	—
Total	140.4	164.3	212.0	210.4	208.0	216.0	242.4
B. *RECURRENT EXPENDITURE*							
1. Protection and maintenance of Forests	32	35	41	49	57	65	73
2. Administrative Overheads	44	47	51	56	60	66	69
Total	76	82	92	105	117	131	142
C. *TOTAL EXPENDITURE* (A plus B)	216.4	246.3	304.0	315.4	325.0	347.0	384.4

TABLE 6 Afforestation Areas by Forest Department Sub-Districts (in dunums)

		A	B
North			
Irbid		**60,000**	**20,000**
Qura		**50,000**	**20,000**
Ajlun		**120,000**	**80,000**
Jerash		**90,000**	**30,000**
	Total	**320,000**	**150,000**
Amman			
Amman		**30,000**	**10,000**
Salt		**50,000**	**20,000**
	Total	**80,000**	**30,000**
South			
Kerak		**5,000**	**5,000**
Tafileh		**5,000**	**5,000**
Shobek		**5,000**	**5,000**
	Total	**15,000**	**15,000**
West			
Jenin		**15,000**	**15,000**
Nablus		**30,000**	**20,000**
Jerusalem		**20,000**	**10,000**
Hebron		**10,000**	**5,000**
	Total	**75,000**	**50,000**
TOTALS for all Forest Districts		**490,000**	**245,000**

Column "A" Estimated area of Government land in each district suitable for Afforestation.

Column "B" Total area in each district proposed for afforestation during the Seven Year Plan.

TABLE 7 Numbers of Seedlings required (in 000's)

	1964	1965	1966	1967	1968	1969	1970
1. For State afforestation	1,650	2,200	4,400	4,400	4,400	4,400	5,500
2. For private afforestation	550	700	1,400	1,400	1,400	1,400	1,800
Total	2,200	2,900	5,800	5,800	5,800	5,800	7,300

N.B.

1. **Quantities for the State Afforestation program have been estimated on the basis of 1000 seedlings per dunum and then increased by 10 per cent to allow for replacement of failures and to give a small surplus for the use of schools and other government departments.**
2. **Private requirements have been estimated as being one-third of Government requirements.**
3. **The cost of seedling production (Forest Nurseries) has been included under the Capital Expenditure required for Afforestration (Item A-1, in Table 5).**

AGRICULTURAL MARKETING PROGRAM

The Seven Year Program for Economic Development of Jordan gives major emphasis to the development of the agricultural sector; this program will result in substantial increases in output of agricultural produce and in export potential. The improvement of the internal and external marketing and distribution of food and agricultural products is therefore of cardinal importance in achieving the objectives of the program.

There are many problems affecting agricultural marketing; producer's lack of "know-how" in harvesting and handling results in damage and lack of uniformity; there are no grades and standards regulations; there are no clear export and import policies; there are complaints about the margin between producer and consumer prices; there is no adequate information service on prices in the internal and external markets. Adequate information on quantities avilable of specific grades cannot be obtained now since all produce is marketed upgraded. Exporters for specific market demands need to purchase or handle very large volumes of produce in order to obtain even a small portion meeting specific requirements. Under present handling methods, sufficient quantities of highly persihable vegetables cannot be accumulated to meet large volume specifications orders. External marketing is further handicapped by unsuitable merchandizing methods, transport difficulties, and inadequate knowledge of the requirement of foreign markets. In addition, the development of an efficient marketing system in Jordan requires the establishment of marketing facilities, including packing plants and processing factories, that are of efficient size, properly located and run by trained personnel.

The Agricultural Marketing Bureau was created in 1962 with the objective of "initiation, development and maintenance of marketing improvement programs based on the results of marketing and market research, and the supervision of public marketing facilities. This is to say, its role is investigatory, regulatory, advisory, and promotional; in certain fields it will seek to stimulate action by other bodies". The Bureau became a Department of the Ministry of Agriculture in 1964.

In view of the fact that a major impediment to marketing improvement in Jordan is the lack of trained personnel capable of initiating and guiding marketing development work and specialized facilities, the Government of Jordan submitted an application to the United Nations Special Fund for the establishment of a centre for research, demonstration and training in agricultural marketing. The Agricultural Marketing Centre became operational on 29 October 1964, and all experts are now in Jordan, each with a Jordanian Counterpart. Work is now under-way in all areas, and will continue according to the Plan of Operation so as to establish a permanent institution for providing the research, demonstration, training and advisory services necessary to the development of an effective marketing system in Jordan.

Technical experts to be supplied by the United Nations Special Fund for the period are as follows (in man-months)

1964	1965	1966	1967	1968
21	66	81	57	15

Fellowships, each of one year duration to be provided by the United Nations Special Fund, are as follows : -

	No.	Year
Food technology	1	66/67
Refrigeration	1	67/68
Post harvest physiology	1	66/67
Grading and inspection	1	66/67
Marketing (fruits and vegetables)	1	67/68
Packing and transport	1	66/67
Market research	1	65/66

Objectives of the Agricultural Marketing Program

1) Discovering and developing markets for agricultural products
2) Developing improved and lower cost marketing methods, procedures and facilities, and improved institutions

Proposal 5-48. *Market and marketing research*

The Agricultural Marketing Centre and the Marketing Department will study existing and new markets, and existing marketing methods and procedures. Based on these studies, recommendations will be made on various marketing problems and an overall master plan will be developed for the expansion and improvement of the marketing system in Jordan.

Proposal 5-49. *Regulations*

The Marketing Department will lay down the necessary regulations for :

a) Unification and control of weights, scales, and measures, of capacity for agricultural products

b) Grades, packing standards, labelling, and certification

Regulations will be based upon the research undertaken in proposal 5-48 and after consultation with the trade as represented in the Advisory Council of the Marketing Department. Regulations will be applied as soon as possible to export commodities and expanded, as conditions and qualified staff permit, to the domestic market. The Agricultural Marketing Department will be responsible for ensuring that its regulations in regard to grades, packages etc... are enforced for both exported and locally sold produce. Close co-ordination between the Marketing Department and the proposed standards Bureau of the Ministry of National Economy will be essential in setting up the standards and in enforcement.

A Foreign Trade Committee for Agricultural Products should be established to determine regulations on imports and exports of specific commodities in the best interest of the nation, and to provide for clear co-ordination of these regulations among the various Ministries. Composed of the Under Secretaries of Agriculture, National Economy and Foreign Affairs, this Committee would be assisted by a technically trained Secretariat provided by the Agricultural Marketing Department, as well as by other technical consultants as necessary.

Proposal 5-50. *Domestic price information service*

The Agricultural Marketing Department will initiate a program of daily price collection from the main produce markets concerning farm wholesale and retail prices in order to provide a market news service of use to both farmers and the trade. These statistics will be analysed periodically to provide data as to margins and seasonality of price movements.

In addition to price information, data will be collected and analyzed concerning volumes of each commodity passing through the markets.

Proposal 5-51. *Foreign market information service*

The Marketing Department will provide daily information as to prices and volumes of produce in neighbouring Arab countries, such information to be available to all potential exporters. This involves close co-ordination between the Marketing Department and the commercial attaches proposed for the Foreign Trade Section of the Ministry of National Economy. The

Commercial attaches will make daily reports as to prices and volumes in the markets for which they are responsible. The Marketing Department inspectors at the borders will also provide daily information as to the volume of produce clearing these border points.

The Marketing Department wil assemble this information and disseminate it via radio along with information as to local prices and volumes (See Proposal 5-50).

The Marketing Department will analyze these data from foreign markets periodically and make the results available to potential exporters.

Proposal 5-52. *Education and demonstration activities*

The Marketing Department, in co-operation with the United Nations Special Fund Agricultural Marketing Centre will conduct a program with farmers and those involved in marketing to improve the present methods of marketing. For this purpose, specialized training courses in marketing will be established in Amman and at the 3 demonstration centres at Wadi Yabis, Arroub and North Shouneh. Each centre will consist of a demonstration plant for grading, packing and storage, provided with the necessary facilities such as classrooms and demonstration equipment.

Proposal 5-53. *Marketing Development*

The Marketing Department, along with the Jordan Development Board and United Nations experts will investigate the desirability and procedures for establishing an organization or organizations which would be responsible for the marketing of agricultural produce, its preparation for different uses, and the overall co-ordination between production, processing and marketing. This will aim at providing farmers with stable and adequate returns, at supplying consumers with adequate and healthful supplies of food at fair prices and at improving the national income as a whole.

Efficient marketing of fruits and vegetables requires large volumes of produce classified according to grades and specifications. Since grading by farmers themselves is unsatisfactory, produce should flow from farms to packing plants distributed in the various producing areas where it would be graded and packed according to the requirements of the different markets.

To provide for the orderly development of such facilities, the Marketing Department, in accordance with its regulations, will promote the establishment and improvement of adequate packing, processing cold storage and similar facilities throughout the country in line with the increasing agricultural production; or if necessary, the Marketing Department or an independent government organization will purchase, build and improve such facilities.

This will require that substantial funds be appropriated, as listed in the Appendix, from Government capital, levies on produce handled, or loans and grants. These plants would be operated, and eventually, owned, by farmers' co-operatives, to the extent possible.

The Marketing Department and the Agricultural Marketing Centre will undertake technical and economic studies as to plant location, sizes, facilities, commodities and operational methods in addition to the relationship of these plants to wholesale and retail markets. These studies will be included in the earlier mentioned investigation for establishing an organization or organizations which would be responsible for the marketing of agricultural produce.

Proposal 5-54. *Processing of Agricultural Products*

After operating the packing plants mentioned above it is likely that there will be a considerable surplus of vegetables and fruits which would be unexportable and more than the local markets could consume. This surplus is in addition to the expected expansion of agricultural production. In order to absorb these large surpluses it is imperative to establish a factory for canning Jordanian fruits and vegetables. Preliminary estimates put the cost of such a factory at JD's 75,000 (See Appendix).

Proposal 5-55. *Cold Storage*

The Jordanian Markets are frequently glutted during certain periods of the year with potatoes. This causes prices to drop and frequently potato production becomes unprofitable in spite of Jordan's favorable growing conditions. Because Jordan does not have refrigerated storage available in the production areas, the country resorts to imports from Arab and other countries which possess adequate refrigerated storage capacity. Therefore, to encourage farmers to expand production of this important crop and to protect them from low prices and also to decrease imports, it is very essential to establish sufficient refrigerated storage facilities for potato surpluses. The cost of such facilities is estimated to be JD's 50,000.

Staff Requirements

In order to achieve the objectives of the agricultural marketing program, the staff of the Marketing Department will be expanded with adequately trained personnel as follows : -

Staff	64/65	65/66	66/67	67/68	68/69	69/70	70/71
Administrative	17	19	24	24	24	24	24
Inspection	11	16	17	19	21	23	23
Packing and Transport	1	1	2	2	2	2	2
Refrigeration and Storage	1	1	2	2	2	2	2
Grading and Standards	1	1	2	2	2	2	2
Market News	2	5	7	7	7	7	7
Market Research	1	1	3	3	3	3	3
Market Management	1	1	2	2	2	2	2
Packing, Processing and Cold Storage Plants	2	4	25	40	50	60	65

AGRICULTURAL MARKETING. Total Expenditure Required (JD's)

	1964/65		1965/66		1966/67		1967/68		1968/69		1969/70		1970/71	
	Gov. Sources	External Sources	Gov. Sources	External Sources	Gov. Sources	External Sources	Gov. Sources	External Sources	Gov. Sources	External Sources	Gov. Sources	External Sources	Gov. Sources	External Sources
U.N.S.F. Contribution														
Experts		13570		36567		48994		39102		12667				
Fellowships		—		429		4928		5357		1786				
Equipment		2857		51422		2678		2142		1607				
Other		768		1750		2107		2678		1053				
Total		17195		90168		58707		49279		17113				
Government Contribution														
Share of Gross Expert Cost	20015		9249		7749		2839							
Buildings	12500													
Rental of Offices	1600		2500		2500		2500		2500		2500		2500	
Tech. & Admi. Staff	12166		15676		13316		19712		20824		21764		22380	
Packing Plants														
Operating Staff (1)	468		4752		7920		10848		14136		17424		19006	
Travel and Field allowances	570		1000		1000		1000		1000		1000		1000	
Postage, Teleg., Water etc.	500		1000		1000		1000		1000		1000		1000	
Miscellaneous	500		1000		1000		1000		1000		2000		2000	
Materials & Supplies	700		1000		1000		1000		1000		3000		3000	
Office & Tech. Equip.	—		300		300		300		300		300		300	
Total	49019		36477		40785		40199		41760		48988		51188	
Packing Plants (3)														
Number (Total 11)		(3)		(1)		(2)		(2)		(2)		(1)		
Cost :														
Buildings		39933		12000		24000		24000		24000		12000		
Equipment		67870		23000		46000		46000		46000		23000		
Total		107803(2)		35000		70000		70000		70000		35000		
Processing Plants (1)														
Number (Total 1)				(1)										
Costs :														
Buildings				15000										
Equipment				60000										
Total				75000										
Grand Total	174017		236645		169492		159478		128873		83988		51188	

(1) See Proposal 5-53

(2) Including Funds for North Shouneh Citrus Packing Plant.

(3) See Proposal 5-54.

AGRICULTURAL CREDIT

Agricultural credit is provided by two agencies. The Agricultural Credit Corporation (ACC) which provides long-term and medium-term credit and the co-operatives which provide seasonal credit (up to one year).

Agricultural Credit Corporation

The ACC was established as a legal entity in 1960 with independent financial status. It operates through its head office in Amman and 11 district offices. Its paid up capital consists of assets and funds of the credit institutions which were absorbed into the ACC when it was created along with funds from the Government and other sources. Paid-up capital as of March 31, 1963 amounted to JD 4,009,000.

During 1962/63, loans amounting to JD 1,024,000 were made as follows :-

Seasonal loans	JD	49,000
Terracing and tree planting		215,000
Irrigation		58,000
Motors		25,000
Machinery		57,000
Livestock		100,000
Citrus planting		8,000
Land reclamation		325,000
Farm building		10,000
Loans to Co-operative Central Union		177,000
Total		1,024,000

It has been agreed that the ACC will not make seasonal loans in the future, leaving responsibility for that field entirely to the co-operatives.

During 1963 a loan agreement was signed, between the Government and the International Development Association under which three million dollars will be loaned by IDA to the Government and reloaned by the Government to the Corporation for issue as loans to farmers. Loans to farmers which include IDA funds must be made on the basis of JD 2 from IDA funds to JD 1 from ACC funds.

The rate of interest on loans to farmers is being increased from 4 per cent to 5.25 per cent as a result of the condition of the IDA loan.

The IDA loan was not made at the beginning of the Corporation's fiscal year but it is assumed in the Plan that JD 500,000 will be withdrawn during each of the fiscal years 1963/64 and 1964/65 and that additional IDA funds will be made available at the same rate for future years.

The loan agreement with the IDA which was revised on 27/5/1965 calls for the distribution of JD 1,066,000 for the following purposes : -

	JD (000's)
I) Technical assistance and accounting machinery	25
II) Loans to farmers :	
1) Land reclamation and improvement	102
2) Establishment of tree crop plantations	40
3) Development and improvement of farm water supplies	237
4) Farm machinery	165
5) Livestock production	380
6) Farm buildings and storage facilities	58
7) East Ghor on-farm development	59
Total	1,066

In preparing this plan, several factors had to be taken into consideration. Five new branches are to be established so that in 1970 the corporation will have 16 branches. Each branch will have a minimum of two technical employees — a credit supervisor and a specialized accountant — together with the necessary staff to conduct the branch operations. It is expected that 2 to 3 trainees will be sent for training abroad each year.

Total loans to be made by the ACC are scheduled as follows (in JD 000's)

1963	1964	1965	1966	1967	1968	1969	1970
1,406	1,422	1,572	1,724	1,889	1,927	2,080	2,262

This schedule is based on the assumption that additional funds will be made avialable to the ACC after 1964/65.

Table 7 outlines the program of the ACC. It should be noted that expenditure includes board fees, salaries, transportation, light and heat, typewriters and calculating machines, vehicles maintenance, depreciation, furniture, stationery, etc., (Table 7 Row 18).

The revenue is composed of interest on loans (see footnote 1 in Table 8), interest on bank deposits and miscellaneous income of smaller amounts. This revenue covers the operating expenses throughout the plan period and adds substantially to the amount of cash available for loaning.

Total cash on hand at the beginning of the year corresponds, naturally, to the total cash at the end of the previous year i.e. item 23. This figure includes both committed and uncomitted cash. Committed cash is estimated at one-fifth of total loans made during the year (assuming five payments a year on the average). From 1963/64 onward, all cash available during the year is intended to be spent during that year so that item 23 (uncommitted cash) will be reduced almost to zero.

No change in overpayments (item 22) is anticipated starting 1963/64 which allows item 24 (change in cash committed but not withdrawn) to be equal to the difference between total cash of this year and the last year.

Tables 8, 9, and 10 illustrate some of the details and procedures underlying the figures contained in Table 7.

TABLE 8 Agricultural Credit Corporation Program and Cash Flow 1961-1970 (JD 000's)

	August 1st. March 31st.	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
1. Cash on hand at first of year	248	191	558(5)	323	301	261	314	345	378	385	416
2. Uncommitted cash at first of year	248	157	418(5)	186	—	—	—	—	—	—	—
3. Interest due (1)	150	161	170	214	246	337	374	415	452	492	534
4. Interest received	70	134	128	176	205	281	311	346	377	410	445
5. Instalments due	695	1,430	1,601	1,593(7)	1,632(7)	1,726(7)	1,899(7)	2,067(7)	2,080(7)	2,248(7)	2,464(7)
6. Instalments received	81	418	634	740(7)	817(7)	917(7)	1,057(7)	1,206(7)	1,232(7)	1,371(7)	1,537(7)
7. Interest on bank deposits	5	17	22	20	18	20	23	25	27	29	31
8. Additional cash made available	256(2)	244(4)	76(6)	500(8)	500(8)	500(8)	500(8)	500(8)	500(8)	500(8)	500(8)
9. Total cash (1+4+6+7+8)	660	1,004	1,418	1,759	1,841	1,979	2,205	2,422	2,514	2,695	2,929
10. Total uncommitted cash (2+4+6+7+8)	660	970	1,278	1,622	1,540	1,718	1,891	2,077	2,136	2,310	2,513
11. Short term loans	77	63	49	—	—	—	—	—	—	—	—
12. Other ACC loans (medium and long)	127	202	719	1,206	1,202	1,290	1,366	1,431	1,517	1,613	1,729
13. Cooperatives loans (C.C.U.)	45	36	177	200	220	282	358	458	410	467	533
14. USAID loans	60	166	79	—	—	—	—	—	—	—	—
15. Other loans	148(3)	—	—	—	—	—	—	—	—	—	—
16. Total loans (11 to 15 inclu.)	457	467	1,024	1,406	1,422	1,572	1,724	1,889	1,927	2,080	2,262
17. Interest payable	—	—	—	—	8(11)	24(11)	40(11)	56(11)	72(11)	88(11)	104(11)
18. Operating expenses	46	62	68	100	110	122	127	132	137	142	147
19. Extra-ordinary expenses	—	—	—	116(9)	—	—	—	—	—	—	—
20. Total cash committed (16 to 19 incl.)	503	529	1,092	1,622	1,540	1,718	1,891	2,077	2,136	2,310	2,513
21. Change in cash committed but undrawn	32	70	29	164	—40	+53	+31	+33	+ 7	+31	+36
22. Change in overpayments	2	36	—32	—	—	—	—	—	—	—	—
23. Total cash at end of year (9—20+21+22)	191	581	323	301(10)	261(10)	314(10)	345(10)	378(10)	385(10)	416(10)	452(10)
24. Total uncommitted cash at end of year (10—20)	157	441	186	—	—	—	—	—	—	—	—

Notes on Above

(1) Interest calculated at 4% on loans outstanding at first of year plus 4% on half the new loans made during year. Starting 1963-64 the rate is changed to 5.25%. (See Table 9).

(2) From USAID 105; from Government of Jordan 151.

(3) Seed loans.

(4) From USAID 180, from Government of Jordan 23, from Jordan Development Board 41.

(5) Difference between Row 23 of 1961-2 and Row 1 of 1962-63 accounted for by transfer of Village Loan funds.

(6) From United States Agency for International Development.

(7) See Table 10.

(8) From International Development Association.

(9) Building and accounting machines.

(10) Estimated at 20% of new loans.

(11) Interest to be paid to Jordan Development Board at 3.25% on IDA loan.

TABLE 9 Agricultural Credit Corporation *Loans Outstanding at Beginning and End of Fiscal Years 1962-63 to 1969-70* (JD 000's)

Year	Loans outstanding at beginning of the year	New loans during year	Collections during year	Loans outstanding at end of year
62/63	3,989	1,024	634	4,379
63/64	4,379	1,406	740	5,045
64/65	5,045	1,422	817	5,650
65/66	5,650	1,572	916	6,306
66/67	6,306	1,724	1,057	6,973
67/68	6,973	1,889	1,206	7,656
68/69	7,656	1,927	1,232	8,351
69/70	8,351	2,080	1,371	9,060
70/71	9,060	2,262	1,537	9,785
Totals		15,306	9,510	

TABLE 10 Agricultural Credit Corporation *Estimated Total Instalments Due and Total Collections (1962-63 to 1970-71)* (JD 000's)

DETAILS	1962-63(4)	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
1. Due last year	—	1,601	1,593	1,632	1,726	1,899	2,067	2,080	2,248
2. Collected last year	—	634	740	817	916	1,057	1,206	1,232	1,371
3. Due in arrears	1,346	967	853	815	810	842	861	848	877
4. Due from old loans(1)	355	409	401	369	361	299	185	172	147
5. Sub-total	1,601	1,376	1,254	1,184	1,171	1,141	1,046	1,020	1,024
6. Due from new loans(2)									
A. Cooperative loans	—	125(5)	165	209	265	339	304	346	397
B. Other loans	—	92(2)	213	333	463	587	730	882	1,043
7. Total due	1,601	1,593	1,632	1,726	1,899	2,067	2,080	2,248	2,464
8. Collections from old loans(3)	—	551	502	474	468	456	418	408	410
9. Collections from new loans									
A. Cooperatives 100%	—	125	165	209	265	339	304	346	397
B. Other loans 70%	—	64	150	233	324	411	511	617	730
10. Total Collections	634	740	817	916	1,057	1,206	1,233	1,371	1,537

Notes on Above

(1) Loans made before April 1st, 1962. Village loans and cooperatives loans are excluded. Due instalments from old cooperatives loans are treated separately. (See Table 11, Footnote (4).

(2) Loans made after March 31st, 1962. Old cooperative loans included. (See Table 11).

(3) 40% of Row 5.

(4) Actual figures.

(5) See Table 11.

TABLE 11 Agricultural Credit Corporation *Instalments due from New Loans* (¹) *1963-64 to 1970-71* (JD 000's)

Loaning year	Category of loan	Amount loaned	Due 1963-64	Due 1964-65	Due 1965-66	Due 1966-67	Due 1967-68	Due 1968-69	Due 1969-70	Due 1970-71
1962-63	Short term loans(²)	49	12	12	12	13				
	Cooperative loans(³):									
	old loans(⁴)	450	90	90	90	90	90			
	new loans	177	35	35	35	35	37			
	Other loans(⁵)	798	80	80	80	80	80	80	80	80
	Total	1,024	217	217	217	218	207	80	80	80
1963-64	Cooperatives(⁶)	200		40	40	40	40	40	—	—
	Other loans	1,206		121	121	121	121	121	121	121
	Total	1,406		161	161	161	161	161	121	121
1964-65	Cooperatives	220			44	44	44	44	44	—
	Other loans	1,202			120	120	120	121	120	120
	Total	1,422			164	164	164	164	164	120
1965-66	Cooperatives	282				56	56	56	56	58
	Other loans	1,290				129	129	129	129	129
	Total	1,572				185	185	185	185	187
1966-67	Cooperatives	358					72	72	72	72
	Other loans	1,366					137	137	137	137
	Total	1,724					209	209	209	209
1967-68	Cooperatives	458						92	92	92
	Other loans	1,431						143	143	143
	Total	1,889						235	235	235

1968-69	Cooperatives	410							82	82
	Other loans	1,517							152	152
	Total	1,927							234	234
1969-70	Cooperatives	467								93
	Other loans	1,613								161
	Total	2,080								254
1970-71	Cooperatives	533								
	Other loans	1,729								
	Total	2,262								
		15,106	217	378	542	728	926	1,034	1,228	1,440

Notes on Above

(1) Loans made after March 31st, 1962.
(2) To be repaid in four years.
(3) To be repaid in five years.
(4) Loans made before April 1st, 1962, will be repaid in 5 years, first repayment in 63-64.
(5) To be repaid in 10 years average.
(6) See Table 8.

AGRICULTURAL CO-OPERATIVES PROGRAM

The co-operative movement in Jordan started in 1952 following the establishment of the Department of Co-operative Development, now in the Ministry of Social Affairs. The development and program of non-agricultural co-operatives is dealt with in Chapter 16.

The co-operative movement has grown rapidly and soundly until it is now an important part of the agricultural sector. There are about 260 agricultural Credit and Thrift Societies providing seasonal loans to about 14,000 members and about forty Supply Co-operatives and Marketing Co-operatives.

In 1959 the Central Co-operative Union was established as an autonomous body providing finance, supervision, advice, and auditing service to local co-operatives. The Union obtains a considerable portion of its funds on loan from the Agricultural Credit Corporation. These funds, together with the Union's own funds are loaned to the local Credit and Thrift Co-operatives for re-loaning by the local co-operatives to their members. The Union provides financial assistance and in some cases management advice to supply and marketing co-operatives.

The Department of Co-operative Development of the Ministry of Social Affairs is responsible for promoting and registering new co-operatives, and ensuring the enforcement of regulations applicable to all co-operatives.

The objectives of the agricultural co-operative program are as follows:-

1) Increase the number of supervised agricultural credit societies to 425 societies by 1970 in order to take over the entire task of making short-term agricultural loans from the Agricultural Credit Corporation.

2) Increase membership of agricultural credit societies to 30,000 members by 1970.

3) Increase the size of loans to individual members of agricultural societies from the present average of JD 40 to JD 65 by 1970.

4) Establish about 29 supply and marketing co-operatives.

5) Establish unions for producers of olive oil, grains, tobacco, fruits and vegetables, and dairy products.

The yearly programs as well as capital requirements are presented in the following pages and based on the following assumptions :-

a) Average membership of new societies 30 members.

b) Average loan per new member JD 40.

c) Increase in membership of existing societies by 8 per cent over previous year.

d) The increase of member loans corresponding with the availability of funds.

e) The sharing of members in the capital and regular saving by JD 1.5 per member per year.

f) To increase the co-operative reserves by 1 per cent of the funds to be acquired from the ACC and 3 per cent of the total societies' own funds.

I. *Agricultural Credit and Thrift Societies*

Year 1964-65		JD's
1) Funds required		
a) New societies : 20 societies with 30 members each and loans of JD 40 per member		24,000
b) New members in existing societies : increase of 1,170 members (8%) and loans of JD 40 per member		46,800
c) Increase loans to existing members		22,060
	Total	92,860
2) Financial resources		
a) Members' shares and savings at JD 1.5 per member (16,410 members)		24,615
b) Commission on ACC funds (1% of JD 700,200)		7,002
c) Commission on societies' own funds (3% of JD 208,250)		6,247
d) Sub-total		37,860
e) Required from ACC		55,000
	Total	92,860
3) Situation at end of year		
a) Number of societies	300	
b) Number of members	16,410	
c) Total owed to ACC		755,200
d) Societies' own fund		246,110
e) Sub-total (c) and (d)		1,001,310
f) Average loan per member		61
g) Average membership per society	55	

Seasonal loans through co-operatives

Year 1965-66		JD's
1. Funds required		
a) New societies : 20 societies with 30 members each and loans of JD 40 per member		24,000
b) New members in existing societies : increase of 1310 members (8%) and loans of JD 40 per member		52,400
c) Increase loans to existing members		39,010
	Total	115,410
2. Financial resources		
a) Members' shares and savings at JD 1.5 per member (18320 members)		27,480
b) Commission on ACC funds (1% of JD 755,200)		7,552
c) Commission on societies' own funds (3% of JD 246000)		7,383
d) Sub-total		42,310
e) Required from ACC		73,000
	Total	115,410
3. Situation at end of year		
a) Number of societies	320	
b) Number of members	18320	
c) Total owed to ACC		828,200
d) Societies' own funds		288,520
e) Sub-total (c) and (d)		1,116,720
f) Average loan per member		61
g) Average membership per society	57	

Seasonal loans through Co-operatives

Year 1966-67		JD's
1. Funds required		
a) New societies : 20 societies with 30 members each and loans of JD 40 per member		24,000
b) New members in existing societies : increase of 1460 members (8%) and loans of JD 40 per member		58,400
c) Increase loans to existing members		58,100
	Total	140,500

2. Financial resources

a) Members' shares and savings at JD 1.5 per member (20,380 members)	30,570
b) Commission on ACC funds (1% of JD 828259)	8,282
c) Commission on societies' own funds (3% of JD 288529)	8,648
d) Sub-total	47,500
e) Required from ACC	93,000
Total	140,500

3. Situation at end of year

a) Number of societies	340	
b) Number of members	20,380	
c) Total owed to ACC		921,200
d) Societies' own funds		336,020
e) Sub-total (c) and (d)		1,257,220
f) Average loan per member		61
g) Average membership per society	60	

Seasonal loans through co-operatives

Year 1967-68

1. Funds required

	JD's
a) New societies : 25 societies with 30 members each and loans of JD 40 per member	30,000
b) New members in existing societies : increase of 1630 members (8%) and loans of JD 40 per member (22760 members)	65,200
c) Increase loans to existing members	77,230
Total	172,430

2. Financial resources

a) Members' shares and savings at JD 1.5 per member (22,760 members)	34,140
b) Commission on ACC funds (1% of JD 921200)	9,212
c) Commission on societies' own funds (3% of JD 336020)	10,080
d) Sub-total	53,430
e) Required from ACC	119,000
Total	172,430

3) Situation at end of year

a) Number of societies	365	
b) Number of members	22,760	
c) Total owed to ACC		1,040,200
d) Societies' own funds		389,450
e) Sub-total (c) and (d)		1,429,650
f) Average loan per member		62
g) Average membership per society	62	

Seasonal loans through co-operatives

Year 1968-69	JD's
1) Funds required	
a) New societies : 20 societies with 30 members each and loans of JD 40 per member	24,000
b) New members in existing societies : increase of 1820 members (8%) and loans of JD 40 per member (25180 members)	72,800
c) Increase loans to existing members	69,055
Total	165,855

2) Financial resources

a) Members' shares and savings at JD 1.5 per member (25,180 members)	37,770
b) Commission on ACC funds (1% of JD 1040200)	10,402
c) Commission on societies' own funds (3% of JD 389450)	11,683
d) Sub-total	59,855
e) Required from ACC	106,000
Total	165,855

3) Situation at end of year

a) Number of societies	385	
b) Number of members	25,180	
c) Total owed to ACC		1,146,200
d) Societies' own funds		499,300
e) Sub-total (c) and (d)		1,595,500
f) Average loan per member		63
g) Average membership per society	65	

Seasonal loans through co-operatives

Year 1969-70		JD's
1) Funds required		
a) New societies : 20 societies with 30 members each and loans of JD 40 per member		24,000
b) New members in existing societies : increase of 2010 members (8%) and loans of JD 40 per member (27,790 members)		80,400
c) Increase loans to existing members		83,200
Total		187,600
2) Financial resources		
a) Members' shares and savings at JD 1.5 per member (27,790 members)		41,685
b) Commission on ACC funds (1% of JD 1146200)		11,462
c) Commission on societies' own funds (3% of JD 449300)		13,479
d) Sub-total		66,600
e) Required from ACC		121,000
Total		187,600
3) Situation at end of year		
a) Number of societies	405	
b) Number of members	27,790	
c) Total owed to ACC		1,267,200
d) Societies' own funds		515,900
e) Sub-total (c) and (d)		1,783,100
f) Average loan per member		64
g) Average membership per society	68	

Seasonal loans through co-operatives

Year 1970-71	JD's
1) Funds required	
a) New societies : 20 societies with 30 members each and loans of JD 40 per member	24,000
b) New members in existing societies : increase of 2220 members (8%) and loans of JD 40 per member	88,800
c) Increase loans to existing members	97,230
Total	210,030

2) Financial resources

a) Members shares and savings at JD 1.5 per member (30,610 members)	45,915
b) Commission on ACC funds (1% of JD 1267200)	12,672
c) Commission on societies' own funds (3% of JD 515900)	15,477
d) Sub-total	74,030
e) Required from ACC	136,000
Total	210,030

3) Situation at end of year

a) Number of societies	425	
b) Number of members	30,610	
c) Total owed to ACC		1,403,200
d) Societies' own funds		589,930
e) Sub-total (c) and (d)		1,993,130
f) Average loan per member		65
g) Average membership per society	72	

II. *Supply and Marketing Co-operatives*

During the period 1964/70 the following co-operatives and unions of producers will be established to cover the whole country :

Type of Co-operative	No.
Fruit and vegetable marketing co-operatives	11
Olive oil : pressing, storage and marketing co-operatives	11
Tobacco marketing co-operatives	3
Livestock products and poultry marketing co-operatives	4
Canning of fruit and vegetables	1
All purpose marketing co-operative	1
Grain marketing co-operatives	2
Union of producers of vegetables and fruits	1
Union of producers of tobacco	1
Union of producers of livestock products	1
Union of producers of olive oil	1
Union of producers of grains	1
Central union of co-operatives in the Ghor area	1
Total	39

Funds required *(JD 000's)*

1964	1965	1966	1967	1968	1969	1970
140	200	250	200	100	100	150

Funds required will be sought from external sources through technical assistance and development aid programs.

VALUE OF AGRICULTURAL PRODUCTION

The Program for Agriculture should result in considerable expansion in the volume and value of farm production during the period of the Plan. The following table is based on the assumption of "normal" crop years, although it is recognized that individual years may depart considerably from normal because of weather conditions. It is evident early in 1964 for example, that production in 1964 will be much above average and considerably above the figures presented in Table 12. Actual estimates are included in the Tables of Chapter 2.

TABLE 12 Gross Value of Farm Production (JD 000's)

	1964	1965	1966	1967	1968	1969	1970
1. Grains and legumes	6,970	7,070	7,180	7,460	7,500	7,850	8,150
2. Vegetables	7,790	8,480	8,950	9,440	9,960	10,390	11,040
3. Tobacco	240	260	280	310	340	370	390
4. Fruits, vines & olives	6,730	7,020	7,410	7,770	8,070	8,430	8,770
5. Forest products	150	160	170	180	190	200	210
6. Sales of animals	1,580	1,620	1,660	1,710	1,760	1,810	1,860
7. Animal products	1,550	1,600	1,640	1,670	1,740	1,790	1,850
8. Poultry meat and eggs	1,260	1,340	1,450	1,560	1,680	1,800	1,930
9. Honey	250	270	290	320	350	380	420
10. Fishing	60	100	140	150	160	180	190
11. Afforestation (labor)	50	60	80	100	100	100	100
12. Construction on farms	200	200	210	220	230	240	250
13. Sub-total	26,830	28,180	29,460	30,890	32,080	33,550	35,160
14. Less feed used in produ.	830	850	870	890	930	960	1,000
15. Gross Value of Farm Production	26,000	27,330	28,590	30,000	31,050	32,590	34,160

Table 12 follows the categories presented in "National Accounts 1959-61", p. 13. Details are given in the tables in the Appendix to this chapter.

Input Requirements

In addition to the large sums necessary for capital investment in irrigation facilities, terracing, sub-soiling, tree and vine planting, land levelling, and farm building, there must be a considerable expansion in recurring cost items in order to achieve the increase in agricultural production called for under the Agricultural Program. Some of these expenditures are considered below :

1. *Fertilizers*

The amount of fertilizer used is minute compared with that which could be used economically.

TABLE 13 Inorganic Fertilizers Sold to Farmers (Tons)

Year	Nitrogeneous	Phosphatic	Others	Total
1960	1,728	337	283	2,348
1961	2,188	316	364	2,868
1962	2,230	414	432	3,076

With increased irrigation, more fertilizer should be used in order to increase yields. By 1970 fertilizer use should be at least 30,000 tons per year, mainly nitrogeneous fertilizers.

2. *Agricultural chemicals*

The sale of insecticides and chemicals for the treatment of plant and animal diseases may be expected to increase considerably as agriculture becomes more commercial and as production of fruits and vegetables increases.

TABLE 14 Agricultural Chemicals Sold to Farmers (Kilograms)

Year	Tree Washes	Phosphoric Compounds	Benzine Hexachloride	Yellow Sulphur (tons)	Animal and Poultry Medicaments
1960	4,110	7,832	21,879	668	8,445
1961	4,124	35,684	80,021	740	9,502
1962	5,014	25,076	47,016	919	17,889

It is expected that the use of various agricultural chemicals in 1970 will be about seven times that of 1962.

3. *Machinery*

While there are relatively few tractors in Jordan, their numbers have been increasing rapidly.

The Agricultural Credit Corporation has been providing credit for the purchase of tractors in cases where such purchases are economically justified.

It is anticipated that the number of tractors in Jordan will be about 3,000 by 1970.

There will be a considerable increase in other farm machinery and pumps.

TABLE 15 Number of Tractors in Jordan

Year	Number sold During Year	Number of Tractors End of Year
1960	76	883
1961	206	1 089
1962	245	1 334

TABLE 16 Ministry of Agriculture Recurring (additional to 1963) and Capital Expenditures (JD 000's)

Project	1964		1965		1966		1967		1968		1969		1970		Total	
No.	Cap.	Rec.	Cap.	Rec.	Cap.	Rec.	Cap.	Rec.	Cap.	Rec.	Cap.	Rec.	Cap.	Rec.	Cap.	Rec.
5-1	1.0	1.6	1.0	1.6	7.2	6.4	0.5	6.4	0.5	6.4	0.5	6.4	0.5	6.4	11.3	35.2
5-2	—	6.6	—	7.1	—	6.7	—	9.2	—	8.7	—	8.7	—	8.4	—	55.4
5-3	—	4.7	—	4.2	13.0	7.1	2.6	7.2	1.6	7.3	1.7	7.4	1.7	7.5	20.6	45.4
5-4	30.0	—	11.0	8.0	0.2	8.0	0.2	8.0	0.2	8.0	0.2	8.0	0.2	8.0	42.0	48.0
5-5	—	—	—	—	—	2.2	—	2.2	—	2.2	—	2.2	—	2.2	—	11.0
5-6	—	4.3	—	4.3	1.0	5.8	1.0	8.0	1.0	8.0	1.0	8.0	1.0	8.0	5.0	46.4
5-7	0.2	2.1	0.2	1.8	0.4	5.5	0.4	5.5	0.4	5.5	0.4	5.5	0.4	5.5	2.4	31.4
5-8	1.2	2.3	0.2	3.2	9.0	13.2	3.0	12.8	—	12.4	—	12.5	1.0	12.7	14.5	69.1
5-9	—	3.0	—	3.0	—	4.1	—	4.3	—	4.6	—	4.8	—	5.2	—	29.0
5-10	—	0.8	—	1.1	—	4.0	—	4.0	—	4.0	—	4.0	—	4.0	—	21.9
5-11	—	—	—	=	—	3.5	—	4.5	—	4.5	—	4.7	—	4.7	—	21.9
5-12	—	2.8	—	2.8	—	5.9	—	6.1	—	6.1	—	6.1	—	6.1	—	35.9
5-13	—	—	—	—	—	2.5	—	2.5	—	2.5	—	2.5	—	2.5	—	12.5
Total	32.4	28.2	12.5	37.1	30.9	74.9	7.7	80.2	3.7	80.2	3.8	80.8	4.8	81.2	95.8	463.1

TABLE 16 (continued)

5-15	—	20.0	—	16.0	—	21.0	—	18.0	—	18.0	—	16.0	—	16.0	—	125.0
5-16	—	—	—	—	—	5.3	—	10.7	—	14.1	—	14.3	—	14.6	—	59.0
5-17	—	2.5	—	2.6	—	4.0	—	3.5	—	4.5	—	2.0	—	2.0	—	21.6
5-18	236.0	—	90.0	—	130.0	—	100.0	—	100.0	—	100.0	—	100.0	—	856.0	—
5-22	—	—	—	—	3.0	1.6	1.0	1.6	1.0	1.6	1.0	1.6	1.0	1.6	7.0	8.0
5-24	—	—	—	—	10.0	—	10.0	—	10.0	—	10.0	—	10.0	—	50.0	—
5-25	10.6	—	17.2	—	35.0	—	35.0	—	35.0	—	35.0	—	35.0	—	202.8	—
5-26	5.0	—	5.0	—	5.0	—	5.0	—	5.0	—	5.0	—	5.0	—	35.0	—
5-27	—	—	—	—	1.8	6.5	—	2.5	—	2.5	—	2.5	—	2.5	1.8	16.5
5-28	—	0.5	—	0.5	26.5	2.2	14.5	2.3	7.5	2.3	7.5	2.4	5.5	2.5	61.5	12.7
5-29	—	—	—	—	1.2	0.9	0.2	0.6	—	0.9	—	0.9	—	0.9	1.4	4.5
5-31	2.4	10.0	5.5	28.0	9.4	16.0	6.0	17.0	5.0	16.0	—	15.0	—	15.0	28.3	117.0
5-33	3.5	0.6	1.0	0.5	8.3	0.5	6.5	0.5	—	0.5	3.0	0.5	3.0	0.5	25.3	3.6
5-34	—	0.3	—	0.3	7.5	5.5	7.5	5.5	—	5.4	—	5.6	—	5.8	15.0	28.4
5-35																
5-39	4.0	2.3	51.5	14.6	57.0	29.9	34.0	39.5	25.0	51.5	11.0	57.0	11.0	62.0	193.5	256.8
5-40	60.0	—	60.0	—	60.0	—	—	—	—	—	—	—	—	—	180.0	—
5-43	—	—	—	—	—	—	2.0	—	—	—	—	—	—	—	2.0	—
5-44	48.0	31.0	59.0	34.0	106.0	38.0	105.0	40.0	104.0	45.0	105.0	46.0	105.0	47.0	632.0	280.0
5-45	—	32.0	—	35.0	—	41.5	—	49.0	—	57.0	—	65.0	—	73.0	—	352.0
5-46	85.0	18.0	94.0	19.0	94.0	20.0	94.0	23.0	94.0	22.0	104.0	23.0	114.0	23.0	679.0	148.0
5-47	1.0	15.8	2.0	18.6	1.0	20.8	1.0	21.4	—	23.0	1.0	24.0	1.0	24.4	7.0	148.0
5-48																
5-55	123.2	50.8	161.4	75.2	72.7	96.8	72.2	87.3	71.6	57.3	35.0	49.0	—	51.2	536.1	467.6
Total	611.1	212.2	559.1	281.4	659.3	385.4	501.6	402.6	461.8	401.8	421.3	405.6	395.3	423.2	3609.5	2511.8

SUMMARY

Proposal 5-1

Increased research on tomatoes and other vegetables commencing in 1964 in order to promote increased yields.

Proposal 5-2

Plant protection research.

Proposal 5-3

Expansion of research on wheat and barley in 1964 in order to promote increased yields.

Proposal 5-4

Initiation in 1964 of five year program of research on dry land farming with emphasis on machine use and soil and water conservation.

Proposal 5-5

Initiation of research on the production and curing of Virginia tobacco.

Proposal 5-6

Expansion in 1965 of soil testing service to farmers as part of an extensive program to encourage use of fertilizers.

Proposal 5-7

Initiation of research on range land and forage crops.

Proposal 5-8

Expanded research on the suitability of various livestock breeds under East Ghor conditions.

Proposal 5-9

Expansion of research concerning sheep and goats in upland areas.

Proposal 5-10

Initiation in 1964 of research on inland fish production at Wadi Yabes, with extension to other suitable sites.

Proposal 5-11

Initiating special studies on Organic Chemistry.

Proposal 5-12

Research on Oil Seed Crops.

Proposal 5-13

Creation of Farm Economics Section in the Department of Research in order to undertake farm management and related studies.

Proposal 5-14

Constitution of the Department of Research as a separate Department attached to the Ministry of Agriculture, with its own budget and a salary schedule sufficiently high to attract and retain qualified research workers.

Proposal 5-15

Upgrading of qualifications of staff in Agricultural Extension and Technical Services Department by foreign and in-service training programs.

Proposal 5-16

Expansion of Agricultural Extension Services.

Proposal 5-17

Establishment of an Information Section at the Agricultural Extension and Technical Services Department.

Proposal 5-18

Continuation of Rural Development project in East Ghor area.

Proposal 5-19

Promotion of land development in East Ghor through a special section of the Department of Agricultural Extension and promoted by an incentive payment program.

Proposal 5-20

Continuation and expansion of existing extension activities, with special emphasis on farm management and soil analysis.

Proposal 5-21

Initiate a program whereby the eight nurseries operated by the Horticulture Section begin to specialize in the production of one or two kinds of seedlings.

Proposal 5-22

Development of Al Faisal nursery to produce grafted vines in considerable numbers.

Proposal 5-23

Encouragement to private nurseries by Horticulture Section and Agricultural Credit Corporation through technical advice and credit.

Proposal 5-24

Co-operative fruit-tree planting project.

Proposal 5-25

Soil conservation and olive tree planting project.

Proposal 5-26

Vine and fruit-tree rejuvenation project in co-operation with N.E.F.

Proposal 5-27

Establishing a nursery at Tafileh.

Proposal 5-28

Expansion of the production of certified seeds of certain varieties of cereals, vegetables and forage crops.

Proposal 5-29

Production of foundation seeds of certain varieties of vegetables and forage crops.

Proposal 5-30

Initiation by Animal Husbandry Section and Department of Agricultural Extension of a program to promote greater meat production in the Ghor area.

Proposal 5-31

Participation by Animal Husbandry Section in a program of land development in desert areas to increase meat production.

Proposal 5-32

Promotion of a program commencing 1964 designed to increase poultry meat production by 200 per cent by 1970, by providing technical advice and credit to three commercial hatcheries and to broiler-raising farms.

Proposal 5-33

Promotion of increased egg production by providing advice and credit to a number of commercial egg producers and by providing day-old chicks of improved strains to village producers.

Proposal 5-34

Up-grading of Shami and Baladi cattle by careful selection for milk producing characteristics, starting in 1964.

Proposal 5-35

Initiation of a program of tuberculosis eradication in milk cattle.

Proposal 5-36

Initiation of a program to eradicate contagious abortion disease in cattle.

Proposal 5-37

Construction of a veterinary hospital, and ten veterinary clinics during the first 4 years of the Plan.

Proposal 5-38

Establishment of an animal health institute.

Proposal 5-39

Expansion, starting in 1964, of the present animal quarantine centers.

Proposal 5-40

Acquisition of medium size cutters for fishing in the Red Sea with the first cutter to be purchased in 1964.

Proposal 5-41

Improvement in handling and marketing of fish by improved refrigeration facilities.

Proposal 5-42

Agreements should be sought for fishing rights in the Red Sea territorial waters of several other countries. Revision "Fishing Regulations Law".

Proposal 5-43

Improvement of techniques and methods of collecting statistical data. Study of the requirements of wood and wood production including match, plywood and paper industries.

Proposal 5-44

Afforestation of a total of 245,000 dunums over the seven year period of the Plan.

Proposal 5-45

Protection, maintenance, and improvement of existing forests.

Proposal 5-46

Initiation in 1964 of a program of soil and water conservation in the watershed areas dominating the East Ghor Canal.

Proposal 5-47

Improvement of range management, especially by control of grazing.

Proposal 5-48

Initiation of market and marketing research with participation of UN experts.

Proposal 5-49

Introduction of regulations and standards for sale of agricultural produce.

Proposal 5-50

Initiation of an information service on local prices.

Proposal 5-51

Initiation of an information service for external markets and analyze data on prices and volumes of farm products in nearby export markets.

Proposal 5-52

Initiation of a program for education and demonstration activities in the field of marketing of fruits and vegetables.

Proposal 5-53

Improvement of marketing system by studying the possibilities of establishing one or more organizations to be responsible for the marketing of agricultural products.

Proposal 5-54

Processing of agricultural products.

Proposal 5-55

Construction of cold storage facilities for storing surplus agricultural products.

APPENDIX TABLE I Crop Production 1964-1970

Commodity	Dunums (000)	Yield Per dunum (kilos)	Total Prod. (000 tons)	Value of Prod. (JD 000)	Consump. (JD 000)	Net Exports (JD 000)
			1964			
Tomatoes irrigated	140	1,300	182	3,640		
Dry	75	600	45	900		
Total	215		227	4,540	3,252	1,288
Other vegetables						
Irrigated	212			2,226		
Dry	200			926		
Total	412			3,152	2,824	328
Citrus fruits (irrig.)	20	1,500	30	1,200	856	356
Bananas (irrig.)	13	1,300	17	748	516	232
Other fruits (1)	168	204	34.4	858	1,261	- 403
Grapes	210	322	67.6	1,873	1,896	- 23
Olives	570	94	53	2,519	2,044	475
Safflower (irrig.)	—	—	—	—	—	—
Dry	—	—	—	—	—	—
Sesame	46	29	1.3	100	298	- 198
Wheat	2,640	58	153	4,899	8,461	-3,562
Barley	850	61	51	1,103	1,242	- 139
Legumes (food)	245	46	11	497	633	- 136
Grains & legumes (feed)	300	48	14	374	468	- 94
Forage (irrig.) (2)	4	1000	4	100	100	
Tobacco Virginia (3)	30	41	1,230	182	866	- 684
Tobacco Hishi (3)	11	23	265	58	58	
Total Irrig. (4)	389			22,209	24,755	-2,560
Dry	5,345					
			1965			
Tomatoes irrigated	145	1,400	203	4,060		
Dry	80	600	48	960		
Total	225		251	5,020	3,288	1,732
Other vegetables						
Irrigated	220			2,401		
Dry	200			928		
Total	420			3,329	2,952	377
Citrus fruits (irrig.)	21	1,650	35	1,400	899	501
Bananas (irrig.)	13	1,300	17	748	537	211
Other fruits	175	205	35	898	1,311	- 413
Grapes	216	325	70	1,945	1,971	- 26
Olives	592	94	55	2,613	2,111	502
Safflower (irrig.)	—	—	—	—	—	—
Dry	—	—	—	—	—	—
Sesame	43	29	1.25	94	306	- 212
Wheat	2,600	60	156	4,992	8,668	-3,676
Barley	840	62	52	1,100	1,276	- 168
Legumes (food)	250	46	11	506	651	- 145
Grains & legumes (feed)	300	48	14	374	482	- 108
Forage (irrig.)	5	1050	5.2	130	130	
Tobacco Virginia	33	42	1,386	205	844	- 639
Tobacco Hishi	11	23.5	258	56	56	
Total Irrig.	404			23,418	25,482	-2,604
Dry	5,317					

(1) 16% of the area is irrigated.
(2) Dry weight.
(3) Total production in tons.
(4) Area under full Irrigation only.

APPENDIX TABLE 1 (continued)

Commodity	Dunums (000)	Yield Per dunum (kilos)	Total Prod. (000 tons)	Value of Prod. (JD 000)	Consump. (JD 000)	Net Exports (JD 000)
			1966			
Tomatoes irrigated	149	1,500	224	4,258		
Dry	85	600	51	969		
Total	234		275	5,225	3,324	1,901
Other vegetables						
Irrigated	228			2,576		
Dry	200			931		
Total	428			3,507	3,080	427
Citrus fruits (irrig.)	22	1,800	40.5	1,620	941	679
Bananas (irrig.)	14	1,325	19	836	558	278
Other fruits	182	206	37	938	1,361	- 423
Grapes	222	328	72.8	2,017	2,048	- 29
Olives	616	94	57.9	2,721	2,177	544
Safflower (irrig.)	—	—	—	—	—	—
Dry	—	—	—	—	—	—
Sesame	42	29	1.2	91	314	- 223
Wheat	2,560	62	158	5,078	8,897	-3,819
Barley	830	64	53	1,131	1,312	- 181
Legumes (food)	260	46	12	524	670	- 146
Grains & legumes (feed)	290	48	14	361	497	- 136
Forage (irrig.)	8	1100	8.8	220	220	
Tobacco Virginia	36	43	1,548	229	832	- 603
Tobacco Hishi	10	24	240	53	53	
Total Irrig.	448			24,551	26,282	-1,731
Dry	5,333					
			1967			
Tomatoes irrigated	154	1,600	246	4,428		
Dry	90	610	55	990		
Total	244		301	5,418	3,360	2,058
Other vegetables						
Irrigated	236			2,751		
Dry	200			933		
Total	436			3,684	3,208	476
Citrus fruits (irrig.)	23.8	1,900	45.2	1,808	984	824
Bananas (irrig.)	14	1,350	19	836	579	257
Other fruits	190	207	39.3	983	1,411	- 428
Grapes	228	331	75.5	2,091	2,121	- 30
Olives	640	94	60	2,829	2,243	586
Safflower irrig.	2	250	.5	50	50	
Dry	5	150	.75			
Sesame	41	29	1	91	323	- 232
Wheat	2,540	64	162	5,200	9,133	-3,933
Barley	810	66	53	1,140	1,350	- 210
Legumes (food)	260	46	12	524	690	- 166
Grains & legumes (feed)	290	48	14	361	511	- 150
Forage (irrig.)	12	1150	14	345	345	
Tobacco	40	44	1,760	260	754	- 494
Tobacco Hishi	95	24	233	51	51	
Total Irrig.	469			25,671	27,113	-1,442
Dry	5,317					

APPENDIX TABLE I (continued)

Commodity	Dunums (000)	Yield Per dunum (kilos)	Total Prod. (000 tons)	Value of Prod. (JD 000)	Consump. (JD 000)	Net Exports (JD 000)
1968						
Tomatoes irrigated	160	1,700	272	4,624		
Dry	95	620	59	1,003		
Total	255		331	5,627	3,396	2,231
Other vegetables						
Irrigated	244			2,926		
Dry	200			935		
Total	444			3,861	3,336	525
Citrus fruits (irrig.)	25.5	1,900	47.8	1,912	1,026	886
Bananas (irrig.)	15	1,375	21	924	600	324
Other fruits	200	208	41.6	1,040	1,461	- 421
Grapes	235	334	78.5	2,174	2,196	- 22
Olives	670	94	63	2,961	2,310	651
Safflower irrig.	10	250	2.5	220	220	
Dry	20	150	3			
Sesame	40	29	1	67	323	- 245
Wheat	2,500	66	155	5,280	9,355	-4,075
Barley	780	69	53.8	1,146	1,380	- 234
Legumes (food)	260	46	12	524	709	- 185
Grains & legumes (feed)	290	48	14	361	526	- 165
Forage (irrig.)	16	1200	19	480	480	
Tobacco Virginia	44	45	1,980	293	685	- 392
Tobacco Hishi	9	25	225	49	49	
Total irrig.	497			26,919	28,052	-1,133
Dry	5,317					
1969						
Tomatoes irrigated	166	1,800	299	4,784		
Dry	95	620	59	944		
Total	261		358	5,728	3,432	2,296
Other vegetables						
Irrigated	252			3,101		
Dry	200			938		
Total	452			4,039	3,464	575
Citrus fruits (irrig.)	26.9	1,950	52.5	2,100	1,069	1,031
Bananas (irrig.)	15	1,400	21	924	621	303
Other fruits	210	209	43.9	1,098	1,511	- 413
Grapes	242	337	81.5	2,256	2,271	- 15
Olives	700	94	65.8	3,093	2,376	717
Safflower irrig.	20	250	5.0	380	380	
Dry	30	150	4.5			
Sesame	40	29	1.1	87	341	- 254
Wheat	2,450	68	166.6	5,331	9,577	-4,246
Barley	770	72	55.4	1,180	1,416	- 236
Legumes (food)	260	46	11.9	524	728	- 204
Grains & legumes (feed)	290	48	13.9	361	540	- 179
Forage (irrig.)	20	1250	25	625	625	
Tobacco Virginia	48	46	2,208	327	612	- 285
Tobacco Hishi	8.5	25.5	217	47	47	
Total Irrig.	527			28,100	29,010	- 910
Dry	5,317					

APPENDIX TABLE I (continued)

	1 9 7 0					
Commodity	Dunums (000)	Yield Per dunum (kilos)	Total Prod. (000 tons)	Value of Prod. (JD 000)	Consump. (JD 000)	Net Exports (JD 000)
Tomatoes irrigated	170	2,000	340	5,100		
Dry	100	630	63	945		
Total	270		403	6,045	3,468	2,577
Other vegetables						
Irrigated	260			3,276		
Dry	200			940	3,592	624
Total	460			4,216		
Citrus fruits (irrig.)	29	2,000	58	2,320	1,111	1,209
Bananas (irrig.)	15	1,400	21	924	642	282
Other fruits	220	210	46.2	1,155	1,561	- 400
Grapes	250	340	85	2,355	2,346	9
Olives	720	94	67	3,181	2,444	737
Safflower irrig.	25	250	6.3	612	612	
Dry	60	150	9.0			
Sesame	40	29	1.1	87	350	- 263
Wheat	2,400	70	168	5,376	9,793.5	-4,417
Barley	750	75	56.2	1,197	1,449	- 252
Legumes (food)	260	46	11.9	524	747	- 223
Grains & legumes (feed)	290	48	13.9	361	543	- 182
Forage (irrig.)	25	1250	31.3	782	782	
Tobacco Virginia	50	47	2,350	347	599	- 252
Tobacco Hishi	8	26	208	46	46	
Total Irrig.	551			29,528	30,085	- 557
Dry	5,317					

APPENDIX TABLE II Production, Consumption and Net Exports of meat and fish 1964-1970

1 9 6 4

Commodity	No. on Farms (000)	Production		Consumption		Net Exports	
		Tons	Value JD 000	Tons	Value JD 000	Tons	Value JD 000
1. Sheep	700	2,436	767	4,677	1,473	-2,241	- 706
2. Goats	453	1,441	360	4,285	1,071	-2,844	- 711
3. Cattle	69	1,680	264	2,148	353	- 468	- 89
4. Camels	15.5	1,180	197	1,180	197	0	0
5. Poultry	1,160	1,097	329	1,137	341	- 40	- 12
6. Meat & Meat Products				1,477	218	-1,477	- 218
7. Fresh & Frozen Fish		400	60	940	128	- 540	- 68
8. Canned & Preserved Fish				1,280	231	-1,280	- 231
9. Sub-total (Rows 1-8)		8,234	1,977	17,124	4,012	-8,890	-2,035
10. Eggs (volume in millions of eggs)		93	930	98	985	- 5	- 55
11. Milk & Milk Products			1,418		2,100		- 682
12. Hair and Wool		735	139	605	111	130	28
13. Sub-total (Rows 10-12)			2,487		3,196		- 709
14. Grand Total			4,464		7,208		-2,744

1 9 6 5

Commodity	No. on Farms (000)	Production		Consumption		Net Exports	
		Tons	Value JD 000	Tons	Value JD 000	Tons	Value JD 000
1. Sheep	728	2,625	827	4,900	1,543	-2,275	- 716
2. Goats	448.5	1,430	357	4,389	1,097	-2,959	- 740
3. Cattle	69	1,680	264	2,233	369	- 553	- 105
4. Camels	13.9	1,058	176	1,058	176	0	0
5. Poultry	1,320	1,228	368	1,268	380	- 40	- 12
6. Meat & Meat Products				1,544	228	-1,544	- 228
7. Fresh & Frozen Fish		700	105	1,021	145	- 321	- 40
8. Canned & Preserved Fish				1,331	240	-1,331	- 240
9. Sub-total (Rows 1-8)		8,721	2,097	17,744	4,178	-9,023	-2,081
10. Eggs (volume in millions of eggs)		98	980	102	1,024	- 4	- 44
11. Milk & Milk Products			1,454		2,204		- 750
12. Hair and Wool		759	143	619	113	140	30
13. Sub-total (Rows 10-12)			2,577		3,341		- 764
14. Grand Total			4,674		7,519		-2,845

APPENDIX TABLE II (continued)

1966

Commodity	No. on Farms (000)	Production		Consumption		Net Exports	
		Tons	Value JD 000	Tons	Value JD 000	Tons	Value JD 000
1. Sheep	753	2,834	893	5,123	1,614	-2,289	- 721
2. Goats	444	1,415	354	4,494	1,124	-3,079	- 770
3. Cattle	69	1,680	264	2,318	385	- 638	- 121
4. Camels	12.3	936.4	156	936	156	0	0
5. Poultry	1,480	1,376	413	1,416	425	- 40	- 12
6. Meat & Meat Products				1,613	238	-1,613	- 238
7. Fresh & Frozen Fish		950	143	1,086	160	- 136	- 17
8. Canned & Preserved Fish				1,382	249	-1,382	- 249
9. Sub-total (Rows 1-8)		9,191	2,223	18,368	4,351	-9,177	-2,128
10. Eggs (volume in millions of eggs)		104	1,040	107	1,073	- 3	- 33
11. Milk & Milk Products			1,495		2,308		- 813
12. Hair and Wool		783	146	633	114	150	32
13. Sub-total (Rows 10-12)			1,681		3,495		- 814
14. Grand Total			3,904		7,846		-2,942

1967

Commodity	No. on Farms (000)	Production		Consumption		Net Exports	
		Tons	Value JD 000	Tons	Value JD 000	Tons	Value JD 000
1. Sheep	780	3,051	961	5,346	1,684	-2,295	- 723
2. Goats	439.5	1,401	350	4,598	1,149	-3,197	- 799
3. Cattle	69	1,680	264	2,403	401	- 723	- 137
4. Camels	10.7	815	136	819	136	0	0
5. Poultry	1,640	1,542	463	1,582	475	- 40	- 12
6. Meat & Meat Products				1,685	248	-1,685	- 248
7. Fresh & Frozen Fish		1,000	150	1,132	167	- 132	- 17
8. Canned & Preserved Fish				1,433	258	-1,433	- 258
9. Sub-total (Rows 1-8)		9,489	2,324	18,998	4,518	-9,505	-2,194
10. Eggs (volume in millions of eggs)		110	1,100	112	1,122	- 2	- 22
11. Milk & Milk Products			1,516		2,413		- 897
12. Hair and Wool		807	151	647	117	160	34
13. Sub-total (Rows 10-12)			2,767		3,652		- 885
14. Grand Total			5,091		8,170		-3,079

APPENDIX TABLE II (continued)

1968

Commodity	No. on Farms (000)	Production		Consumption		Net Exports	
		Tons	Value JD 000	Tons	Value JD 000	Tons	Value JD 000
1. Sheep	807	3,276	1,032	5,570	1,755	-2,294	- 723
2. Goats	435	1,386	346	4,703	1,175	-3,317	- 829
3. Cattle	69	1,680	264	2,488	418	- 808	- 154
4. Camels	9.1	693.2	115	693	115	0	0
5. Poultry	1,800	1,726	518	1,766	530	- 40	- 12
6. Meat & Meat Products				1,760	260	-1,760	- 260
7. Fresh & Frozen Fish		1,100	165	1,217	180	- 117	- 15
8. Canned & Preserved Fish				1,484	268	-1,484	- 268
9. Sub-total (Rows 1-8)		9,861	2,440	19.681	4,701	-9,820	-2,261
10. Eggs (volume in millions of eggs)		116	1,160	117	1,171	- 1	- 11
11. Milk & Milk Products			1,587		2,518		- 931
12. Hair and Wool		832	157	662	121	170	36
13. Sub-total (Rows 10-12)			2,904		3,810		- 906
14. Grand Total			5,344		8,511		-3,167

1969

Commodity	No. on Farms (000)	Production		Consumption		Net Exports	
		Tons	Value JD 000	Tons	Value JD 000	Tons	Value JD 000
1. Sheep	834	3,509	1,105	5,793	1,824	-2,284	- 719
2. Goats	430.5	1,372	343	4,807	1,202	-3,435	- 859
3. Cattle	69	1,680	264	2,573	434	- 893	- 170
4. Camels	7.5	572	95	572	95	0	0
5. Poultry	1,960	1,933	580	1,973	592	- 40	- 12
6. Meat & Meat Products				1,840	271	-1,840	- 271
7. Fresh & Frozen Fish		1,200	180	1,282	190	- 82	- 10
8. Canned & Preserved Fish				1,535	277	-1,535	- 277
9. Sub-total (Rows 1-8)		10,266	2,567	20,375	4,885	-10,109	-2,318
10. Eggs (volume in millions of eggs)		122	1,220	122	1,220	0	0
11. Milk & Milk Products			1,639		2,632		- 993
12. Hair and Wool		857	161	677	123	180	38
13. Sub-total (Rows 10-12)			3,010		3,975		- 955
14. Grand Total			5,587		8,860		-3,273

APPENDIX TABLE II (continued)

	1970							
Commodity	No. on Farms (000)	Production		Consumption		Net Exports		Increase in Consumption by weight (1964-1970)
		Tons	Value JD (000)	Tons	Value JD (000)	Tons	Value JD (000)	
1. Sheep	861	3,750	1,181	6,017	1,895	-2,267	- 714	5% per year
2. Goats	426	1,358	339	4,912	1,228	-3,554	- 889	2.5% per year
3. Cattle	69	1,680	264	2,657	450	- 977	- 186	4% per year
4. Camels	5.9	450	75	450	75	—	—	6.4% per year
5. Poultry	2,120	2,165	650	2,205	662	- 40	- 12	12% per year
6. Meat & Meat Products				1,944	287	-1,944	- 287	4.5% per year
7. Fresh & Frozen Fish		1,300	195	1,348	201	- 48	- 6	7% per year
8. Canned & Preserved Fish				1,587	287	-1,587	- 287	4% per year
9. Sub-total (Rows 1-8)		10,703	2,704	21,120	5,085	10,417	-2,381	4% per year
10. Eggs (volume in millions of eggs)		128	1,280	128	1,280	0	0	4.5% per year
11. Milk & Milk Products			1,681		2,728		-1,047	4.5% per year
12. Hair and Wool		880	165	690	125	190	40	4% per year
13. Sub-total (Rows 10-12)			3,126		4,133		-1,007	
14. Grand Total			5,830		9,218		-3,388	

CHAPTER 6 *WATER*

Jordan is a semi-arid country, which makes it desirable to have full economic development of water resources. Such development should alleviate scarcities in cities where water for domestic and industrial uses often must be transported in truck-mounted tanks. In addition, drought causes crop failures in the agriculture sector of the economy and results in severe fluctuations in farm income and national income. Higher and more stable agricultural production requires increased quantities of irrigation water.

Execution of the plan for water will be the responsibility of the East Ghor Canal Authority, the Jordan Development Board, the Central Water Authority, and the Regional Corporation of the Jordan River and Tributaries. The interest of the country necessitates the integration of these authorities so as to avoid duplication of work, consolidate responsibility and coordinate efforts.

The East Ghor Canal Authority as it presently stands operates the seventy kilometer canal already built, and will be responsible for the construction of the dams on the side wadis south of the Yarmouk to (and including) the Zerka River, in case that is proved economically feasible.

The Regional Corporation of the Jordan River and Tributaries is presently responsible for the major project involving dams and power installations on the Yarmouk River, and the construction of irrigation structures in the Jordan Valley to use the extra water made available by the Yarmouk Project.

The Corporation is also responsible for the consolidated Arab Project adopted by the Arab League to save the low lands on the river banks (Al-Zor) from such damages as may result from the cessation of the flow of a great amount of Jordan River water, and from the pollution of the remaining waters which become unfit for irrigation. The corporation is also responsible for the exploitation of the Jordan waters within the river basin.

EAST GHOR CANAL AUTHORITY

Using the terminology of the Baker-Harza study of 1955, there are several geographical divisions in the Jordan Valley irrigation program. Stage I refers to the area below (west of) the main canal and extending about 70 kilometers south from the Yarmouk River to the present Arda road; Stage II refers to the area below a main canal to be continued south from the end of Stage I (Arda road); Stage III refers to the West Ghor (i.e. west of the Jordan River); Stage IV refers to dams and irrigation facilities on the side wadis east of the Jordan River; and Stage V refers to areas above the main canals to which water must be pumped.

Early in 1964 work on the main canal had been completed throughout Stage I and a beginning made on the construction of the first of the side wadi dams (Stage IV). Concrete lateral ditches had been constructed and land re-distributed into smaller, but economic, units throughout most of Stage I. Land re-distribution, land levelling, and irrigation are being extended rapidly throughout the southern part of Stage I and should be virtually complete by the end of 1964.

Objective

Full irrigation of 145,000 dunums west and east of the 70 kilometer canal through Stage I. This includes all of Stage I and part of Stage IV (using the above terminology). This will be the direct responsibility of the East Ghor Canal Authority.

Proposal 6-1 *Completion of laterals, land levelling, and land distribution in Stage I*

The East Ghor Canal Authority should be able to complete constructions and land re-distribution by 1964. The estimated cost of this project during that year is JD 138,000.

Proposal 6-2 *The Construction of Side Wadi Dams East of the Main Canal Stage I*

The East Ghor Canal Authority is currently studying the possibility of constructing six side wadi dams, two control dams in Wadi Shu'aib and Kafrain for organizing water distribution, and a network of irrigation facilities in the area east of the Stage I main canal. In case it is decided to construct such dams they will be used to store winter run-off water for irrigation during the dry season. It is estimated that the total irrigated area in the canal basin shall exceed 145,000 dunums above and below the present 70 kilometers of Stage I main canal.

Work has begun on Wadi Ziglab dam and it should be completed in 1965.

East Ghor Canal Authority Operations

a) *Operation and maintenance of East Ghor Canal in Stage I*

The East Ghor Canal Authority has the responsibility for operating and maintaining the irrigation facilities in Stage I. To finance such operations the Authority charges one fils per cubic meter of water up to the rate of 1,500 cu. m. per dunum and thereafter at the rate of two fils per cu. m. It is estimated that these charges will be sufficient to meet operation and maintenance costs in the future.

b) *Land Re-distribution Payments*

The Authority's Law stipulates that no one person can own land units with an area exceeding 200 dunums of Class 1 or 2 land or less than 30 dunums per unit. This involves the Authority in financing payments to former owners and in collecting payments from buyers of land. This role of financial intermediary is complicated by the fact that many of the purchasers of land will be unable financially to make payments of principal or interest for several years whereas the Authority is obligated to repay the former owners over the ten years following acquisition of their land. The result is that the Authority will have to raise approximately JD 200,000 to JD 230,000 each year to make payments and will accumulate similar credits with purchasers.

Funds will be sought from different sources to cover this temporary deficiency.

c) *Organization*

In the past the Authority has been primarily an engineering agency; in the future it will become increasingly an organization for water distribution and maintenance of installations. This change will necessitate some internal re-organization. Loans from abroad can only be obtained if the East Ghor Canal Authority is able to present financial statements, projections, and accounts which meet the standards of a sizeable business.

THE YARMOUK PROJECT

The technical and economic features of the project designed to utilize the waters of the Yarmouk River have been the subject of considerable study. In 1964 a Yugoslav consulting firm produced a six-volume final report including recommendations and setting up cost estimates and cost-benefit analysis. A separate report on the Mukheibeh Dam was also produced by the same firm. The following proposals are based on these reports :-

Objectives

1) Full irrigation of the greatest possible area.

2) Generation of hydro-electric power from installations associated with the storage dams on the Yarmouk river with up to 62 megawatts installed capacity.

Proposal 6-3. *Irrigation Features*

This part of the Yarmouk project includes the following activities :

1) Construction of Mukheibeh Dam with an annual capacity of 200 MCM.

2) Construction of Zor canals and raising the sides of the East Ghor main canal to carry 20 m³/sec.

3) Construction of a new canal 60 km long parallel to the main canal with a capacity of 16 m³/Sec.

4) Construction of West Ghor main canal 60 km in length with a capacity of 16 m³/sec. together with a siphon.

5) Construction of a system of laterals in the West Bank.

6) Extension of the East Ghor main canal by 40 km to irrigate the Southern part of the East Ghor.

7) Construction of a system of laterals in the Southern part of the East Ghor.

8) Improvement of land and construction of installations to protect the canals from flowing and construction of a drainage system in the area.

9) Starting the Construction of the Maqarin Dam with a capacity of 350 MCM.

10) Construction of six pumping stations.

11) Construction of a drainage system for the Western and South eastern Ghor and the necessary laterals that extend canal water to all these areas.

The cost of the irrigation features resulting from the Yarmouk project is as follows (in JD 000's) : *

1964	1965	1966	1967	1968	1969	1970
300	700	5000	9248	5000	5604	4400

Proposal 6-4

Construction of hydro-electric power generating facilities based on the dams of Proposal 6-3. Generation facilities will be constructed at two sites, the first at North Shouneh with a total installed capacity of 30 megawatts and the second at Maqarin.

The cost of installing the former is included in the electricity sector of the program.

CENTRAL WATER AUTHORITY

Objectives

The objectives of the CWA involve the development, conservation and protection of the water resource for domestic, industrial, irrigation and other beneficial purposes in all areas of the Kingdom except for Stage I of the East Ghor area, and for the activities connected with the Yarmouk Project.

Activities to Achieve Objectives

1. *Spring Development*

Spring development consists of : (a) development of the source; (b) protection from contamination and subsequent destruction; (c) construction of drinking facilities for humans and animals; (d) possible construction of small storage reservoir if indicated. While the cost per spring in the past has been about JD 1,000 to JD 1,200, it is intended to concentrate on larger springs in the future, with an estimated average cost of JD 2,000.

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* Estimates include the cost of building five side wadi dams in the Ghor Area which are listed in proposal 6-2.

2. *Irrigation projects*

For the purposes of spring development and development of ground and surface water resources, the Central Water Authority will construct canals and structures to allow the maximum amount of water to reach the land. These projects may be divided into two categories :

a) small projects, usually irrigating less than 100 dunums, with sizes up to 1,000 dunums

b) major projects of more than 1,000 dunums. The Central Water Authority has completed important projects at Wadi Musa, Aina, Ghor Haditha, and Ghor Fara'. Studies are underway on other projects.

A considerable amount of the investment required must be provided by the farmers who will benefit from the projects. These are eligible to borrow from the Agricultural Credit Corporation for such projects.

3. *Cistern Renovation*

Cisterns are the least dependable source of water and the most subject to contamination. Their use, however, is universal throughout the Kingdom and will be continued for a long time to come. With eventual progress they will no doubt become only a supplementary source of water for humans and be used mostly for animals.

Cisterns are selected only where other water sources are not available. Renovation involves considerable repair, reconstruction and lining of existing cisterns.

The average cost of cistern repairs in 1962 and 1963 was JD 3,000 per cistern.

4. *Dams and Associated Water Spreading Construction*

Surface water must be retained by means of dams and water spreading structures for use during the year for irrigation, human and animal use and to recharge the groundwater aquifers where possible.

Besides the construction of water spreading projects, dams will be constructed during 1965, and 1966 on Wadi Shu'eib and Wadi Kufrein, on the east bank of the Jordan Valley between Wadi Zerka and the Dead Sea. These projects will be a continuation of the East Ghor Canal System when the Stage II canal is in operation. They will provide larger and more dependable water supplies to about 15,000 dunums. The Central Water

Authority will be responsible for the construction of these dams, with financial assistance from the United Kingdom loan.

5. *Well Drilling*

The Central Water Authority controls all the drilled wells in the Kingdom under a licensing procedure. There are 24 private contractors owning in most cases one drilling rig a piece.

With the use of its 12 drilling rigs and of contractors' rotarying rigs when desirable, the Authority drills exploratory wells and production wells for villages, cities and other quasi-public agencies. No private wells are drilled by CWA.

It is expected that approximately 50 wells will be drilled per year of which 30 will be wholly or partially cased. There is no possibility of estimating the cost per well but the 52 wells completed in 1962/63 cost JD 100,000 including the casing as required. The costs of 1963/64 increased as a contract was accomplished in that year for four slim holes in the Jericho Syncline.

In 1961 the Authority was the only agency able to make pump tests; but in 1962 and 1963 private concerns have started making tests. The CWA role will eventually be reduced to inspection and certification rather than undertaking pump tests for privately owned wells as in the past. For the immediate future the CWA will continue to make specific tests and these are included in the drilling program and costing. In 1962/63 some 85 tests were made at an average cost of JD 50 per test.

6. *Desert and Village Pumps, Pump Houses, Tanks, and Tankers*

As drilled wells become available throughout the Kingdom some of these will be furnished with pumps, pump houses, and tanks to provide supplies in the desert and to serve as truck haul points in the more settled areas.

In addition, it is expected that individual villages will also establish the necessary requirements for such installations as groundwater potential is proved. Costs of installations vary but an average of JD 4,000 may be expected.

The Central Relief Committee will take the responsibility for a number of water tankers used to provide water to drought-stricken villages. These tankers may be used for other purposes (e.g. road construction) when not required for providing water for villagers.

7. *Water Geology and Hydrology*

The discovery of underground water resources and assessing the extent of their use is probably the most important long run facet of water resource development in Jordan. This involves the preparation of geological mapping, analysis of geological structures and inventory and correlation of well data. Most of this work is being presently undertaken by engineering and geology consultants.

Full cooperation should be developed among the geological units in the Ministry of National Economy, the Development Board and the Central Water Authority. It is also suggested that an integrated department should be established for all units concerned with geological research.

8. *Surface Hydrology*

Surface hydrology measurements and studies are an essential tool used in all water resource development programs. The establishment and maintenance of an effective national hydrology system and service is the goal of the present Central Water Authority program. Rain gauges, river flow gauging stations, and meteorological stations, are all being established. The Hydrology Division of CWA is strengthening its staff in order to be able to maintain all gauge stations established and to keep current in reducing gauge results to hydrological analysis and reports, and to expand present network.

Close co-operation with the Meteorological Section of the Ministry of Communications is essential.

9. *Municipal Water Supply*

The construction of modern water systems with at least piped supplies has been taking place in several of the smaller municipalities. Work has been completed in North Shuneh, South Shuneh, and Ramtha, and is now under way in Yabes, Karak, Sweileh, Hebron and Bethlehem. For the future, specific plans are being considered for Salt, Madaba, Qalqilia, Husn, Tafileh, Ajloun, Mafraq and Aqaba.

Sources of financing for this work will mainly be the Municipal Loan Fund, but Government grants and CWA aid in design and supervision of construction will all play a role. Expenditure on water supply for municipalities is further discussed in the chapter on Local Governments.

The design of the water supply systems for Jordan's five major cities have entered the final phase. The Irbed, Amman, Ramallah, Jerusalem works are under construction, all with International Development Association financing. International Development Association financing has been agreed for Nablus and Zerqa and work began early in 1964. The projects mentioned above should be completed in 1966 leaving only the final scheme for Jerusalem in abeyance as this work is dependent on source location and is expected to be completed in 1968. After that, only distribution systems expansion will be required.

10. *Village Water Supply Systems*

A program to construct water supply systems is under way with Jaber, Qweira, Dhiban and Tannour being in various stages of completion. Plans are progressing on many other systems and the general objective of using available sources for piped water to villages is being implemented.

With financing available from state funds, foreign aid grants and village self-help and loan type agreements, it is estimated that four of these projects can be completed per year.

11. *Special Investigations*

As detailed information is made available regarding the availability of water and kind of rock, the Authority will be able to pinpoint certain projects. In order to interest potential assistance in developing such projects "pre-investment" studies must be made. This is the purpose of the present Azraq Groundwater Project, a joint CWA - United Nations project, and it is expected that additional projects such as Wadi Mujeb, Ghor Safi, Jafr, El Hasa, Wadi Dhulail and deep sandstone acquifers will enter into this special investigation stage during the period 1964/70.

12. *Operation and Maintenance*

The operation of the general yard of the Central Water Authority at Wadi Sir and the technical support required for project and non-project activities is included. The increasing number of desert and village facilities operated by CWA are also included. As projects are completed this expense will increase. Also some maintenance of cisterns, dams, wells and other structures is included to ensure that these remain serviceable. Most of the vehicle fleet is costed in this item.

13. *Administrative requirements for Central Water Authority*

The CWA has administration and overhead costs connected with running the offices, supervision and general back-up to the Authority effort such as design, planning and all administrative services. Foreign assistance may be expected in this item until 1966 but thereafter project assistance only should be expected.

14. *Water Rights*

In a semi-arid country, land is often virtually unproductive without water, and water rights may be as valuable as the ownership of land.

The situation as to water rights on streams and rivers in Jordan is confused. On the West Bank the old Mandate system is still in force whereby water rights could be bought and sold regardless of ownership of land. Water rights are supposed to be registered with the Department of Lands and Surveys, although many are still registered only with owners' committees.

On the East Bank, the Department of Lands and Surveys divides water rights in proportion to dunums of land under irrigation. Land owners who owned water in larger quantities than appropriate to their land are obliged to sell the excess water rights through the Department to other landowners who have insufficient water rights for their land.

The Central Water Authority is carrying out its responsibility of controlling the drilling of wells to tap underground sources.

The activities of the Department of Lands and Surveys in regard to the registration of water rights in proportion to land ownership should be accelerated on the East Bank and extended to the West Bank.

The following schedule shows the expenditures to be incurred during the period 1964/70 to implement the above activities, excluding those numbered, 9, 10 and 11 which expenditures are listed with programs related to municipalities (in JD 000's) : -

Expenditure Schedule (JD 000's)

1964	1965	1966	1967	1968	1969	1970
1391	1800	2060	3860	3740	3290	3265

SUMMARY

This chapter has recommended the following :

Proposal 6-1

Completion of laterals, land levelling, and land distribution in stage I.

Proposal 6-2

The construction of side wadi dams east of the main canal stage I.

Proposal 6-3

Irrigation features of the Mukheibeh Dam.

Proposal 6-4

Construction of hydro-electric generating facilities.

CHAPTER 7 *TOURISM*

Within the boundaries of Jordan are to be found the most interesting historical and religious sites in the world. Yet this wealth of places of interest is remarkably little known to the average tourist from Europe, North and South America, and other parts of the world. Tourism is one of Jordan's most unexploited resources.

Even though tourism is in a relatively underdeveloped state, more foreign currency is spent for Jordan's tourist services than for any other export, and there is reason to expect that this spending can and will be increased in the next decade. With very little promotion of the attractiveness of Jordan for tourists, the number and spending of tourists has increased by about 25 per cent per year since 1959. To more than quadruple annual income from tourism by 1970 (over 1963) is by no means an unreasonable goal. To accomplish this will require a threefold increase in the number of tourists and an increase in the average length of visit per tourist from America from three to four and one-half days, and from Europe from three to four days.

An expansion of tourist spending will yield particularly attractive returns because they will accrue from inexhaustible natural resources — Jordan's history, geography, scenery and climate. Far from depreciating with use, these assets will become increasingly valuable as international travellers become more aware of their attractiveness and as they are made more accessible and convenient for foreign visitors.

Tourist spending provides a high return in foreign exchange relative to fixed capital investment in tourist facilities. The largest capital investment is in hotels which, once constructed, will provide tourist housing for decades to come. It is estimated that total fixed investment for all projects closely related to tourism in the period 1964 to 1970 will amount to about JD 10.9 million (see table 7 below) and the net gain in foreign exchange from tourism over the period is estimated at JD 70.6 million (see table 8 below).

The employment and income effects of tourist expenditures are also very favourable. Tourists require extensive personal services in hotels, in restaurants, from guides, from taxi drivers and others, and demand locally made products, including craft items as souvenirs.

As a means of improving the balance of payments position of Jordan, tourism is superior to any other sector. Net foreign exchange to be gained from tourism is scheduled to increase from JD 4.3 million in 1964 to JD 18.3 million in 1970. (see table 8 below).

Objectives

The objectives of the Tourism program 1964-1970 are the following : -

1) To increase the total number of tourists visiting Jordan from 210,000 in 1962 to 827,300 in 1970.

2) To increase the duration of visits of Americans from 3 days to 4.5 days and that of Europeans from 3 days to 4 days. The increase is assumed to be gradual starting in 1965 and reaching the objective in 1968.

3) Gross Tourist expenditure is expected to increase from JD 6.0 million in 1963 to JD 26.5 million in 1970, assuming political stability in the area, an effective use of the promotional expenditures, and an increase and improvement of tourist facilities within Jordan.

TABLE 1 Estimated Tourist Numbers and Expenditures

	Number of Tourists	Increase over previous year	Promotional Expenditure JD's	Average [1] Expenditure per tourist JD's	Tourist Expenditure JD Million
1960	131,699	27%	—	24.52	3.230
1961	162,058	23%	—	26.78	4.340
1962	209,042	29%	54.000	24.15	5.050
1963	323,470	55%	75,000 +JD 360,000 *for New York Fair*	18.54	6.000
1964	387,323	20%	85,000	19.88	7.700
1965	430,000	10%	122,000	22.00	9.460
1966	494,500	15%	162,000	24.00	11.868
1967	568,675	15%	170,000	26.00	14.786
1968	653,976	15%	190,000	28.00	18.311
1969	752,072	15%	203,000	30.00	22.562
1970	827,279	10%	220,000	32.00	26.473

(1) The projected increase in expenditure per tourist during the late years of the Plan is due to the increase in the duration of visits of tourists other than Arabs and an increasing proportion of non-Arab tourists.

Requirements for Achieving Objectives

In order to reach the above goals, the cooperation of both the government and private sectors of the country will be necessary. The Tourism Authority will have to be strengthened, both in personnel and activities; the Department of Antiquities will have to increase its efforts in the restoration and preservation of ancient sites and in the construction and improvement of museums; the private sector will have to provide more and better hotels, restaurants and sightseeing services; the Industrial Development Fund will have to have more loanable funds to assist in the financing of additional tourist facilities; hotel employees, guides and tourist police will have to be trained to provide better services; special programs and festivals for tourists must be developed; and a vigorous campaign to inform potential tourists of Jordan's attractions will have to be effectively carried out.

Investment of funds and energy in these directions will produce a continuing return to Jordan in foreign exchange and employment that will greatly exceed the cost of the improvements listed above.

Proposal 7-1. *Strengthening of Tourism Authority*

a) *Additional personnel*: In order for the Authority to meet its responsibilities it should double the number of personnel between 1962 and 1970. By employing an average of six new employees each year a staff of 87 persons will be achieved by 1970. New employees should be mainly in the information, public relations and inspection fields.

b) *Foreign training*: Fifty Tourism Authority personnel will have to be trained abroad over the seven years of the plan, each for a minimum period of one year. Of these, 14 should be in administration, 17 in inspection, and 19 in public relations.

c) *New sections*: In addition to the six sections now in the Authority (administration, information and public relations, photography, arts and production, accounting) a new distribution and mailing section and a statistics research and studies section should be formed.

d) *Equipment*: The Authority requires additional photographic equipment, duplication machines, drawing tables and other items.

e) *Legislation*: The Tourism Authority operates under the Tourism Law passed in 1960. On the whole, this legislation gives the Department sufficient authority to do its work effectively. Rules and regulations under this law may be issued by the Authority to protect tourists from exploitation by hotels, guides, travel agencies and other businesses related to tourism. Although the basic Tourism Law is satisfactory from the viewpoint of promoting tourism, it has been studied by an expert.

All rules and regulations derived from this basic legislation should be reviewed in order to determine their effectiveness in promoting the long-run interest of Jordan by encouraging tourism.

TABLE 2 Expenditures Required by Tourism Authority (JD's)

	1964	1965	1966	1967	1968	1969	1970
a) Additional personnel (1)	5,548	9,884	14,686	19,392	24,206	29,539	33,561
b) Training abroad	7,050	11,050	11,050	9,850	7,050	8,125	8,125
c) Equipment	1,200	1,200	4,500	3,000	—	—	—

(1) Additional to expenditure of JD 27,700 on personnel in 1962-63.

Proposal 7-2. *Strengthening of Antiquities Department*

a) *Additional personnel*: The Department of Antiquities requires the services of an architectural engineer, with long experience, two other less experienced architectural engineers, four archaeology or ancient history B.A. graduates, two draftsmen, two surveyors, four museum guides and four antiquity guards (secondary school matriculants).

b) *Foreign training*: Two members of the Antiquities Department personnel should be sent abroad each year for higher university work in order to develop specialists in the following areas : Prehistoric, Numismatic, Classic, Byzantine, Arab and Biblical Archaeology. One year of training in conservation and six-months in casting and moulding is also planned for two members of the Antiquity staff each year over the seven year period.

c) *Equipment*: The existing Photography and Cinema Section will require improved equipment. The entire Department requires a considerable increase in equipment, primarily for restoration and preservation of sites.

TABLE 3 Expenditures required by Antiquities Department (JD's)

	1964	1965	1966	1967	1968	1969	1970
a) Additional personnel (1)							
Four B.A. graduates	1,000	2,000	2,000	2,000	2,000	2,000	2,000
Senior architectural engineer	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Two architectural Engineers	600	1,200	1,200	1,200	1,200	1,200	1,200
Four guides and two guards (matriculants)	600	1,200	1,800	2,400	2,400	2,400	2,400
Two draftsmen and surveyors	1,000	2,000	2,000	2,000	2,000	2,000	2,000
b) Training abroad	3,600	3,600	3,600	3,600	3,600	3,600	3,600
c) Photographic equipment	2,000	1,000	1,000	3,000	500	500	500
d) Dump trucks	12,000	4,000	6,000	12,000	4,000	4,000	2,000
e) Land Rovers	2,000	2,000	—	2,000	—	—	1,000
f) Shovel cranes	3,000	3,000	—	3,000	1,000	—	1,000
g) Cement mixers	2,000	1,000	—	3,000	—	1,000	1,000
h) Winches	4,000	—	—	4,000	—	—	—
i) Other	3,200	2,800	2,300	3,800	1,500	2,800	2,400

(1) Additional to expenditure of JD 22,500 on personnel in 1962-63.

Proposal 7-3. *Promotion of Tourism*

Tourists have many options as to the countries and regions that they may visit. These areas compete vigorously with one another and therefore Jordan must enter this competition effectively if the unequalled drawing power of "the Holy Land" is to be fully realized. Telling the world of Jordan's attractions is at the very heart of the problem of increasing the number of tourists who visit Jordan. Advertizing and promoting Jordan involves (1) a market study; (2) attractively printed promotional materials; (3) a prompt, efficient inquiry-answering service; (4) slides and movies for use abroad (particularly by Jordanian nationals abroad); (5) representation at Fairs and Expositions; (6) magazine and newspaper advertising; (7) contacts with travel agents, airlines, and ship companies, and the furnishing of advertising material to them so that they may serve as sales agents for Jordan; and (8) the conclusion of agreements with specialized companies in international tourist markets for the organization and conduct of public-relations activities.

The programmed allocation for promotional activities over the seven years is JD 1,154,000, of which 90 per cent will be spent abroad and approximately 60 per cent for contract services. Expenditures are scheduled as follows:

1963	1964	1965	1966	1967	1968	1969	1970
347,000*	50,000	30,000	162,000	170,000	190,000	203,000	220,000

* includes allocations for New York Fair.

TABLE 4 Foreign Training Requirements and Cost by Kind of Training

1. Tourism Authority	Total No.	Administration	Inspection	Public relations	Training cost	Transportation	Total	GOJ	USAID
								JD.	
1964	6	2	2	2*	5,850	1,200	7,050		7,050
1965	8	2*	3	3*	9,100	1,950	11,050		11,050
1966	8	4*	2	2*	9,100	1,950	11,050		11,050
1967	8	3*	3	2	8,220	1,630	9,850		9,850
1968	6	1*	2	3	5,850	1,200	7,050	7,050	
1969	7	1*	2	4*	6,760	1,365	8,125	8,125	
1970	7	1	3*	3	6,760	1,365	8,125	8,125	
	50	14	17	19	51,640	10,660	62,300	23,300	39,000

2. Department of Antiquities	1964	1965	1966	1967	1968	1969	1970
University Graduates (2 each year) (¹)	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Conversation one year Training Program	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Casting and Moulding six-months training	600	600	600	600	600	600	600
Total	3,600	3,600	3,600	3,600	3,600	3,600	3,600

Total training cost over 7 years for Tourism — 62,300
Total training cost over 7 years for Antiquities — 25,200
TOTAL — 87,500

(1) To specialize in Prehistoric, Numismatic, Classic, Byzantine, Arab and Biblical Archaeology.
(*) One candidate to be trained in the United States.

Proposal 7-4. *Provision of Additional Hotel Facilities*

The tripling in the number of tourists and the lengthening of the period of stay in Jordan will require an increase in the number of hotel rooms. The required increases estimated below are based upon the expected increases in the number of tourists, an average occupancy rate of 70 per cent, a four day average duration of stay per tourist, and a one-year lead in investment. This 70 per cent occupancy rate has taken into account only tourists and has not allowed for an additional number of local Jordanians. However, the entire subject of hotel requirements, management and regulation will be reviewed soon by a team of hotel experts from the United States.

Additional Double Rooms and Investment Required

	1964	1965	1966	1967	1968	1969	1970
Additional double rooms per year	314	394	642	509	587	532	400
Investment necessary (JD 000's)	900	1,100	1,700	1,600	1,600	1,600	1,200

In 1963 there were 2192 good double hotel rooms in Jordan; by 1970 there should be 5,570. Costs are estimated to average JD 3,000 per double room but vary considerably from year-to-year.

Industrial Development Fund

The cost of providing additional hotel accommodations over the seven years is estimated at JD 9,700,000, most of which will come from private sources. However, the lending capacity of the Industrial Development Fund will have to be increased substantially to facilitate this construction. It is estimated that loans to the extent of JD 2,910,000 will be needed from the Fund for this purpose, representing approximately 30 per cent of the total cost and scheduled as follows :

1963*	1964	1965	1966	1967	1968	1969	1970
157,000	270,000	330,000	510,000	480,000	480,000	480,000	360,000

* (actual)

Proposal 7-5. *Formation of a Hotel Operators Association*

The Tourism Authority is endeavouring to interest hotel owners to form an association for the purpose of exchanging information and promoting solutions to their common problems. It is expected that the officials of the Association will work closely with government officials in up-grading the services of hotels and establishing standards and inspection; and operate as much as possible as an agency of self-regulation of hotel management practices.

Proposal 7-6. *Hotel Training and Guide and Tourist Police Schools*

a) *Hotel Training School.* The Tourism Authority recognizes the importance of up-grading the services performed by hotel employees, guides and tourist police. To this end, the Authority has been urging that schools be established for these purposes. The hotel training school is still in the discussion stage, but the hotel owners have agreed to support it. The proposal is to establish a small hotel in connection with the school where students will receive practical training along with course work. A preliminary estimate indicates a total cost of about JD 65,000 of which JD 30,000 will be for the school and JD 35,000 for the hotel. It is anticipated that the cost will be shared by the Government of Jordan, hotel owners, and foreign agencies.

b) *Guide and Tourist Police School.* It is expected that the guide and tourist police training school will be located in Jerusalem. Students will be graduates of secondary schools. The course for both guides and tourist police will take eight months to complete. In its first year, the school will enrol 87 students.

Proposal 7-7. *Tourist Transport Corporation*

There is a felt need for an organization in Jordan similar to American Express or Thomas Cook's, that will schedule regular daily tours conducted by superior guides in satisfactory forms of transportation. Information of the choices of tours would be made available to tourists on in-coming air flights and at the borders. The Tourism Authority is aware of this need and is considering means of providing for it.

Proposal 7-8. *Promotion of Special Festivals, Programs, and Activities*

Tourists can be persuaded to stay longer, or be tempted to come in off-season, by specially-arranged and well-promoted programs such as

(1) sound and light presentations at well-known sites such as Amman, Jerash, Petra and Jerusalem; (2) cultural festivals in ancient amphitheatres using both Jordanian and foreign attractions; (3) conventions; (4) special institutes on the Middle East archaeology, religious history and other appropriate subjects at the University of Jordan and elsewhere; (5) archaeological "digs" and tours; (6) greater use of the Dead Sea in winter for sailing; (7) provision of golf courses at Jerusalem and Amman; (8) entertainment most indigenous to the Area; (9) the Tourism Authority should cooperate with the private sector to promote recreational programs which would attract a different type of tourists and encourage existing ones to stay longer; and (10) the Tourism Authority should seek the co-operation of the Jordan Arab Army in using small detachments of the Camel Corps as a tourist attraction. Daily inspection parades of 30-40 Camel Corps men to one of the palace areas would have the same attraction as does changing of the guard at Buckingham Palace. It could easily become the greatest single tourist attraction in Amman, and without investment. Not only would such a daily inspection parade be a unique tourist attraction, but it would make it possible to emphasize the excellence of discipline in the Camel Corps.

Proposal 7-9. *Municipal Improvements*

The Municipalities of Jordan can do much to encourage tourism by ensuring cleanliness in the municipal area, providing clean rest rooms, establishing public gardens and parks, naming streets, providing road markers in Arabic and English, encouraging shop-keepers to arrange clean and attractive displays of their wares, encouraging the establishment of cafés and restaurants of good quality, supplying and publicizing sufficient and clean water and clean food, and allocating parking space for buses and taxis.

Proposal 7-10. *Study of National Parks*

A Committee consisting of members from the Ministry of Agriculture, Tourism Authority, Departments of Forestry and Antiquities, the Central Water Authority, Jordan Development Board and three foreign advisors was formed to study a report submitted in 1963 by the British Ornithological Expedition including Julian Huxley (Biologist) for the establishment of National Parks in Azrak, Petra, Wadi Rum and Ajloun, to be financed by foreign agencies like FAO, British and American assistance. However, these projects are still in the discussion stage, and at this time the cabinet is considering a proposal made by the above mentioned committee to entrust the responsibility of execution to the Tourism Authority.

Proposal 7-11. *Restoration and preservation of Holy Places and Archaeological Sites*

A program for the preservation and restoration of historical sites, buildings and monuments — Jordan's major tourist attractions — should be undertaken by the Department of Antiquities. The Seven Year Program calls for restoration and preservation of the following antiquity sites : Jersash, Petra, Ommayad Palaces, Kerak, Shobak, Ajlun, Amman Citadel and Theatre; the monuments of Gadara, Sebastiya and Iraq el-Amir. The total estimated cost over the seven years period is JD 916,900 including JD 784,800 for wages and JD 132,100 for materials.

TABLE 5 Cost of Restoration and Preservation of Holy Places and Archaeological Sites (JD 000's)

	1964	1965	1966	1967	1968	1969	1970	Total
Petra	15	20	20	30	30	25	20	160
Jerash	30	40	40	50	50	50	40	300
Ommayad Palaces Karak, Shobak & Ajlun	10	15	23	20	5	5	5	33
Amman Citadel & Theatre	15	20	30	27	5	5	4	106
Gadara	4	6	12	20	10	10	5	67
Sebastiya Monuments	4	4	5	10	10	5	—	38
Iraq el-amir	4	4	5	10	5	5	—	33
Miscellaneous	3.6	4.9	4.3	5.3	5.9	9.2	5.7	38.9
Total	95.6	127.9	154.3	192.3	137.9	124.2	84.7	916.9

Proposal 7-12. *Provision of Rest Houses and Toilet Facilities*

Many of Jordan's most attractive tourist sites are some distance from café, washroom and other hotel facilities. Sleeping rest houses are planned in Kerak, Azrak and Wadi Rum. A non-sleeping rest house is planned at Qumran, Sebastiya, Amman Citadel, certain desert palaces, Jerusalem (in old city) and two along the Desert Highway. The total cost estimate of these projects to be completed by 1967 is JD 85,000.

TABLE 6 Rest House Requirements and Cost (JD's)

	1964	1965	1966	1967
Kerak (sleeping)	13,000			
Qumran	7,000			
Desert Highway	25,000	5,000		
Sebastiya	7,000			
Amman Citadel	7,000			
Jerusalem (in old city)		7,000		
Desert Palaces			8,000	
Azrak (sleeping)			13,000	
Wadi Rum (Sleeping)				13,000
Total	32,000	19,000	21,000	13,000

Proposal 7-13. *Establishment and expansion of museums*

The new policy of the Department of Antiquities is to establish local museums in every important antiquity site that is frequently visited by tourists. Four museums have already been established in Jericho, Madaba, Irbid and Petra, in addition to those in Amman and Jerusalem. The Seven Year Program calls for the establishment of four others during the first four years. Jerash and Kerak museums are to be established in 1964 and 1965 using old buildings and costing JD 2,000 each. Hebron and Nablus museums are to be established in 1966 and 1967 in new buildings, 20 x 20 square meters, costing JD 6,000 each. Thus, the total cost estimate is JD 16,000.

Proposal 7-14. *Provision of Markers for historical, biblical, and archaeological sites*

The total estimated cost of this project is JD 19,950 divided as follows : -

Road markers and maps	JD 3,950 in 1964
Site markers (history summary of the place)	JD 15,000 divided equally between 1965, 1966 and 1967
Guiding markers (inside sites)	JD 1,000 in 1965

Effects of the Plan on Foreign Earnings

Exports (see table 8 below)

Gross expenditures by tourists will rise from JD 6.0 million in 1963 to JD 26.47 million in 1970, using the Development Board's estimates of tourist and expenditure growth.

TABLE 7 Total additional fixed investment requirements, tourism and antiquities (JD 000's)

	1964	1965	1966	1967	1968	1969	1970	Total
a) Tourism	952.2	1,141.0	1,750.3	1,636.0	1,600.0	1,600.0	1,200.0	9,879.7
Antiquities	125.8	143.7	169.6	229.1	144.9	132.5	92.6	1,038.2
Total New Fixed investment (1)	1,078.0	1,284.7	1,920.1	1,865.1	1,744.9	1,732.5	1,292.6	10,917.9
b) Expected from Domestic Sources								
for hotels (private)	792.0	968.0	1,496.0	1,408.0	1,408.0	1,408.0	1,056.0	8,536.0
for Rest houses	20.2	19.0	21.0	13.0	—	—	—	73.2
for Training School	—	—	20.0	15.0	—	—	—	35.0
Total Domestic	812.2	987.0	1,537.0	1,436.0	1,408.0	1,408.0	1,056.0	8,644.2
c) Expected from Foreign Sources								
PL 480	142.8	142.8	89.0	—	—	—	—	374,6
Foreign Loans through Industrial Development Fund (2)	108.0	132.0	204.0	192.0	192.0	192.0	144.0	1,164.0
USAID for Training School	15.0	15.0	—	—	—	—	—	30.0
Other Foreign Sources for Antiquities (including PL 480 funds after 1966)	—	7.9	90.1	237.1	144.9	132.5	92.6	705.1
Total Foreign	265.8	297.7	383.1	429.1	336.9	324.5	236.6	2,273.7
d) Spent in Jordan	564.2	685.2	1,013.6	988.6	917.5	905.7	671.8	5,746.6
Spent abroad	513.8	599.5	906.5	876.5	927.4	826.8	620.8	5,171.3

(1) Expenditures on promotional activities, training abroad and additional personnel was not included.

(2) Assuming 40% of Industrial Development Fund Loans for hotel construction (constituting 30% of total hotel cost estimates) is going to be provided by Foreign Sources.

TABLE 8 Foreign Exchange Earnings — 1964-1970

			Import(1) Content of Tourist Expend 32%	Promotion Expenditure		Training Expenditure		Hotel Cost		Rest Houses	
Year	No. of Tourists (000)	Tourist Expend. JD (mills)		Total (000)	Foreign Exchange Expend. 90%	Tourism Authority	Import Antiquities	Total (000)	Import content 50%(3)	Total (000)	Cont. 40%
1962	210	5.05	1.616	54	48.6	2	2	—	—	—	—
1963	323	6.00	1.920	435(2)	391.5	4.5	4.5	1,050	525	—	—
1964	378	7.70	2.464	85	76.5	7.05	3.6	900	450	32	12.8
1965	430	9.46	3.027	122	109.8	11.05	3.6	1.100	550	19	7.6
1966	494	11.86	3.795	162	145.8	11.05	3.6	1,700	850	21	8.4
1967	564	14.78	4.729	170	153	9.95	3.6	1,600	800	13	5.2
1968	653	18.31	5.859	190	171	7.05	3.6	1,600	800	—	—
1969	752	22.56	7.219	203	182.7	8.13	3.6	1,600	800	—	—
1970	826	26.47	8.470	220	198	8.13	3.6	1,200	600	—	—
Total 64-70	4102	111.14	35.563	1152	1036.8	62.31	25.2	9,700	4,850	85	34.0
						Total	87.51				

(1) Import content of tourist expenditure is assumed to be approximately 32% of the total expenditure. This is based on a study "Tourist Trade in Jordan" by F. Sargent Florence in which he estimated that 40 per cent of hotel bills (constituting 60% of total tourist expenditure) and 20 per cent of expenditure outside hotels (constituting 40% of total tourist expenditure).

TABLE 8 (continued) (JD 000's)

Hotel Training School		Antiquities Rest.		Museums		Site Markers		Capital Investment			Net Gain
Total (000)	Import Cont. 30%	Total (000)	Import Cont. 15%	Total (000)	Import Cont. 30%	Total (000)	Import Cont. 50%	Tourism Authority	Antiquities	Total Foreign Expend. (000)	In Foreign Exch. (000)
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
15	4.5	95.6	14.34	2	.6	3.95	1.98	1.2	28.2	3,064.7	4,315.2
15	4.5	127.9	19.19	2	.6	6.0	3.00	1.0	13.8	3,751.1	5,458.9
20	6.0	154.3	23.15	6	1.8	5.0	2.50	4.5	9.3	4,861.1	6,809.9
15	4.5	192.3	28.85	6	1.8	5.0	2.50	3.0	30.8	5,772.2	8,991.3
—	—	137.9	20.69	—	—	—	—	—	7.0	6,868.3	11,636.7
—	—	124.2	18.63	—	—	—	—	—	8.3	8,240.3	15,093.6
—	—	84.7	12.71	—	—	—	—	—	7.9	9,360.3	18,301.7
65	19.5	916.9	137.56	16	4.8	19.95	9.98	9.7	105.3	41,858.0	70,607.3
								Total	115.0		

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(2) Including $ 1 million for New York Fair.

(3) Import content is assumed to be approximately 50% of the total costs; i.e. 30 per cent of construction cost (constituting 40% of total cost) and 65% out of Furniture and Equipment costs (constituting 60% of total cost).

SUMMARY

This chapter has recommended the following action : -

Proposal 7-1

Strengthen the Tourism Authority by extra staff, staff training and better equipment in order to enable it to carry out its responsibilities effectively.

Proposal 7-2

Strengthen the Department of Antiquities by extra staff, training and better equipment.

Proposal 7-3

Effective promotion of tourism if maximum results presented in this plan are to be achieved.

Proposal 7-4

Provision of additional hotel facilities.

Proposal 7-5

Creation of a Hotel Operators' Association to up-grade hotel facilities and services.

Proposal 7-6

Establishment as soon as possible of a hotel training and guide and tourist police schools.

Proposal 7-7

Formation of Tourist Transportation Corporation to provide a better system of transportation and guiding.

Proposal 7-8

Arrangements for Special Festivals, Programs and Activities to persuade tourists to stay longer, or tempt them to come in off-seasons.

Proposal 7-9

Improvement of Municipal areas.

Proposal 7-10

Establishment of National Parks.

Proposal 7-11

Restoration and preservation of Holy Places and Archaeological sites.

Proposal 7-12

Provision of rest houses and toilet facilities.

Proposal 7-13

Establishment of four new museums in Jerash, Kerak, Hebron and Nablus.

Proposal 7-14

Construction of markers for historical, biblical and archaeological sites.

CHAPTER 8 *MINING*

At present the only mineral resources being commercially exploited are phosphate, marble and salt, of which the latter two are quite small in value. In order to achieve a significant improvement in the balance of payments position by 1970, Jordan places heavy reliance on the production and exportation of minerals. This includes a large increase in phosphate production bringing annual exports up to about two million tons per year worth JD 7 million in 1970, and the production of about 500,000 tons per year of potash worth JD 5,360,000 from the brines of the Dead Sea with production starting in 1968, and an increase in exports of marble to about JD 150,000 per year. As the import content of production is low, these increases in exports will make possible a major improvement in Jordan's balance of payments position.

In addition to phosphate, potash and marble, which are currently in production and/or passed the scrutiny of technical and feasibility studies, there are a number of other possible mineral resources. The exploration and feasibility program and schedule for those resources are given in detail below.

Objectives

1) To continue the general multi-purpose geological survey of Jordan.

2) To prepare detailed geological maps of areas having mineral deposits which have been located by the general survey, and to carry out geophysical, geo-chemical and other prospecting operations as applicable.

3) To undertake economic feasibility studies of the most promising mineral deposits.

4) To expand greatly the production and exploration of phosphate, potash, marble and to develop any other ore-bearing areas which will prove to be economically feasible.

PHOSPHATE

For many years the Jordan Phosphate Mines Company has extracted phosphate from its mines at Ruseifa, and in recent years has initiated some extraction at El-Hasa. Since 1963 sales opportunities have been escalating, particularly for higher grade products.

Exploration and a feasibility study have been completed in the (El-Hasa) area to determine the size and quality of reserves available, markets, production techniques, and transportation facilities relating to phosphate production. Design of construction has been completed and El-Hasa Project is now in the construction phase. Initial production of medium grade will begin in December 1965. Full production including premium and high premium grades will be achieved by August 1966.

The findings of the consultants indicate the following :

1) In the area of about 500 sq. km. in the vicinity of El-Hasa (principally north and east of El-Hasa), nine ore parcels have been found close to the railway and desert highway. These parcels cover an area of slightly less than 10 sq. km., and contain about 30 million tons of phosphate, of which 23 million tons are concentrated in three ore bodies. These will be exploited first.

2) Much of the ore is soft and grades about 70% T.C.P.

3) The ore of all the nine parcels, with partial exception of one, lies close to the surface, and will make for economic stripping. Mining costs are expected to be considerably lower than at Ruseifa where most of Jordan's phosphate production is presently centered.

4) Preliminary tests indicate that the recovery is expected to be higher than at Ruseifa.

5) Preliminary beneficiation tests indicate that the ore can be easily upgraded by simple dry separation and/or hydraulic classification to make it competitive with the best Moroccan phosphate being marketed. Moroccan phosphate is the criterion of the trade.

6) Transportation cost from El-Hasa to Aqaba will be considerably less than from Ruseifa to Aqaba or to Beirut, especially if a modern transportation technique is adopted. At present the Jordan Phosphate Mines Company exports about 500,000 tons per year largely from Ruseifa.

Proposal 8-1. *Integration of phosphate production and rapid expansion of production at El-Hasa*

The objective is to produce and export two million or more tons per year by 1970 depending on market possibilities. This should be worth about JD 7,000,000. Steps to be undertaken include :

1) Integration and expansion of present operations and organization into one large corporation responsible for all Jordan's phosphate production activities. The Government and the Jordan Phosphate Mines Company have agreed on the form of the expanded organization. Investigation and discussions to this end are now complete.

2) An expanded program of sales promotion will require :

a) a board of directors and technical management working toward low-cost production, with special emphasis on research to make Jordan phosphate more competitive

b) improvement in the present marketing methods and studying the possibility of introducing an experienced consumer partner

3) Production from the low cost mines at El-Hasa at the rate of 500,000 tons per year should begin by 1966 and, according to costs and markets relative to those of the Ruseifa mines, should constitute a rapidly increasing proportion of total production.

4) Railway facilities from El-Hasa to Aqaba may be used by about 1968 to accommodate the increasing volume of phosphate shipments, provided rail haulage is proved to be economically more competitive than truck or any other means of transportation. Prior to 1968, phosphate will be transported by road to Aqaba from El-Hasa and Ruseifa, and to a lesser extent to Beirut from Ruseifa. Several studies have been made of the location and feasibility of the railway facilities. Likewise, studies of other means of transportation are being made to determine which is more economic. Meanwhile, a feasibility study is being made for transporting phosphate by means of a pipeline from El-Hasa to Aqaba.

5) Additional storage and loading facilities for expanded exports of phosphate at the port of Aqaba should be completed by 1966. Open storage of wet phosphate at Aqaba may be possible by 1968. Phosphate would be dried at Aqaba.

POTASH

The feasibility study of potash production was favourable, the designs of pans and dikes and of its plant are complete; and financing of construction has realized noticeable progress.

Proposal 8-2. *Initiation of Potash Production*

The objective is to produce and export at least 500,000 tons of potash per year worth JD 5.36 million per year starting in late 1970.

1) The pan and dike construction should be initiated in 1967, and plant construction in 1968. Pan and dike capacity and rated plant capacity should be 500,000 tons per year.

2) The Safi-Aqaba road of about 185 kilometers should be constructed in the period 1967/69 to facilitate the transportation of potash to Aqaba and supplies from Aqaba to Safi. Design of the road is complete, and total cost is estimated at JD 3.0 million. While the road will be constructed primarily for potash, it will serve the agricultural areas around Safi and the mineral developments in the Wadi Araba.

3) Port of Aqaba loading facilities will be required. Modifications of the present phosphate facilities for the loading of potash as well is proposed.

4) A town following an approved plan must be developed at or near Safi for the employees and service workers of the Arab Potash Company.

5) Expansion of the potash plant should occur about 1975 to increase production. The timing of this expansion will be determined largely by the markets which have been developed in the preceding years.

MARBLE

There are four working marble companies in Amman in addition to a new company which will commence production within a few months. In 1961/62, they employed 210 workers, produced JD 148,000 of output, and exported JD 44,000 of marble and related products.

Proposal 8-3. *Promotion of marble production and exports*

The objective is to export not less than JD 150,000 worth of marble by 1970, and to satisfy all local demands.

1) Although marble exports have been encouraging, a feasibility study concerning the various export markets for different kinds of products should be sponsored by the Jordan Development Board, in conjunction with the Ministry of National Economy and the marble companies.

2) A small technical section related to marble should be considered for the Amman Industrial School or other appropriate institution following the report of the feasibility study.

OTHER MINERAL DEPOSITS

Deposits of copper, manganese, iron, sulphur, barytes, clays, glass sands, radioactive minerals and bituminous rocks are known in various parts of Jordan. Of these, copper, manganese, iron and sulphur have attracted most attention and detailed investigations of some of these mineral deposits have been initiated.

Proposal 8-4

a) It is proposed to expand operations for the discovery of new mineral deposits.

b) It is proposed to expand detailed investigations of the most promising mineral deposits, especially copper, manganese, iron and sulphur.

c) Provided that economically viable deposits can be found, it is proposed to develop mines and beneficiation plants for the commercial production of these ores. No estimates of the immediate requirements for exploitation have been included in this plan.

PETROLEUM

Earlier drilling in Jordan was unsuccessful in finding oil for a number of reasons :

a) The geological information available was very limited.

b) The companies with concessions allocated only limited funds for their operations in Jordan.

c) The equipment used was not the most suitable kind for the requirements in Jordan. For example, the rig drilling capacity had a maximum of only 12,000 feet.

In 1964 a concession was granted to an American firm to undertake drilling in the Kingdom. Drilling operations are underway. No allocations have been made or revenues anticipated as a result of this exploration program.

ADMINISTRATION

Proposal 8-5. *Consolidation of Geologists into one Organization*

At present there are three government bodies operating in the fields of geological surveys and mineral resources exploration and development. These are :

1) Mineral Resources Division of the Ministry of National Economy including the German Geological Mission in accordance with the agreement for technical cooperation in the economic sphere concluded between the Government of Jordan and the Government of West Germany.

2) Mineral Division of the Jordan Development Board.

3) Groundwater Division of the Central Water Authority.

The activities of these bodies overlap and give rise to duplication of work. In view of the importance of geological work in general, and mineral exploitation in particular with regard to the national economy, it is deemed essential that the activities of the above bodies should be merged into one organization to be called Geological Survey and Bureau of Mines.

Under such organization it will be possible to coordinate all the geological and mining and petroleum activities in the country; thus offering maximum benefit to this important sector of the national economy. This proposed organization should eventually have the following divisions : -

1. *Mineral Resources Division responsible for* : -

   a) Detailed prospecting for mineral resources.

b) Compilation of data pertaining to petroleum resources and supervision of all activities pertaining to petroleum exploration, development and production.

c) Supervision of mining operations with special emphasis on economies of scale and on mine and labour safety, and on health.

d) The preparation of a mining law and regulations, as well as concessions, leases, licences and labour legislation pertaining to the mining industry.

2. *Water Resources Division*

Responsible for the investigation, assessment, conservation, and control of water resources.

3. *Technical Services Division*

Responsible for the operation of laboratories, geochemical, geo-physical units, library and records, cartography and other services.

TABLE 1 Financial Requirements (JD 000's)

	1963	1964	1965	1966	1967	1968	1969	1970	Total 1964-70
Phosphate El-Hasa Development *	585	59	1500*	1000*	500*	—	—	—	3059
Potash (pans, dikes, plant)	—	—	200	1200	3300	5700	6800	5300	22500
Marble	35	10	10	10	15	15	15	20	130
Other minerals**	200	25	105	300	300	300	250	250	1530

* On the assumption that phosphate will be transported by truck through 1968 and that stripping and mining of ore will be contracted.

** The figures include recurring expenditure for the Department of Geological and Mineral Research.

SUMMARY

Proposal 8-1

Integration of phosphate production and rapid expansion of production at El-Hasa. Integration occurred in 1964 and the new mines at El-Hasa should commence operations in 1965.

Proposal 8-2

The potash pans, dikes, and plant should be constructed in order to produce potash by late 1970.

Proposal 8-3

A feasibility study in regard to export markets should be conducted in order to explore export market potentials.

Proposal 8-4

Copper deposits, currently the subject of a feasibility study, should be exploited if economically feasible.

Proposal 8-5

Geologists in the Ministry of National Economy, the Central Water Authority, and the Jordan Development Board will be consolidated into one organization.

CHAPTER 9 *MANUFACTURING INDUSTRY*

In 1961 Jordan consumed JD 39.5 million worth of manufactured consumer goods, of which JD 15.3 million or 38.7 per cent were imported. Local production totalled JD 26.0 million, of which JD 1.8 million was exported. This sector therefore accounts significantly for the adverse balance of trade. Insofar as imports of consumer goods reflect personal incomes, the increases in the latter projected in the Plan will exacerbate the payments gap unless local production expands to replace imports and/or to increase exports. Such an expansion in production is the objective of the industrial sector.

Jordan has two specific handicaps to industrial development — a shortage of local raw materials and a small domestic market. Against these factors should be placed low labor costs, a potentially productive labor force, a sound transport system, and established trade connections with neighbouring countries. Above all, the facts that industry has reached its present level, and that the major limitation on faster development has been lack of finance rather than lack of opportunity or entrepreneurial ability, promise well for an effective contribution to the overall goals of the Seven Year Plan from this sector. In fact, startling industrial expansion is not assumed in the Plan; it will be satisfactory if imports of consumer goods can be held stable against rising incomes. In other words, this is a realistic program of industrialization with limited but important objectives.

The basis of the Plan for Industry has been detailed scrutiny of the feasibility of individual industries with regard to consumption patterns, potential import substitution, economic output, and capital requirements. For this purpose, manufacturing industry has been divided into six sub-sectors; quantitative tables which occur in the body of this chapter are summations of sub-sectoral supporting tables which are not reproduced here. In general, industrial development is expected to take place in the private sector with the role of the Government confined to the creation of an economic climate in which industry can flourish through the provision of encouragement, advice and comparatively small amounts of credit.

Objectives

The quantitative targets for manufacturing industry during the period 1964/70 are summarized in Table 2 which follows. These overall objectives may be set out as follows :

For total investment (fixed and working capital combined) of JD 11.1 million, a 62 per cent increase in "value added" is anticipated from 1963 to 1970 — from JD 9.9 million to JD 15.8 million. Changes in other aggregates relating to goods which are or will be manufactured locally are as follows :

TABLE 1

(JD million)

	1963	1970	Percentage increase
Consumption	43.4	61.1	41
Exports	1.8	3.1	72
Imports	15.2	15.5	2
Local production	30.0	48.7	62

It is not suggested that manufacturing industry will contribute directly to improving the balance of trade; foreign currency required for imports of similar goods, of raw materials for local processing and of capital goods for industry will rise from JD 25.0 million in 1963 to JD 30.5 million in 1970, while exports of finished goods will increase only from JD 1.8 million to JD 3.1 million. Nevertheless, this imbalance will have permitted a 62 per cent increase in domestic production and the creation of a considerable stock of capital goods. The contribution to the balance of trade comes from the fact that although consumption of manufactured goods is expected to increase by JD 17.7 million, imports of these goods will increase by only JD 0.3 million between 1963 and 1970. (Data based on applications for licenses and for loans, and on feasibility studies. Table 2 was compiled by summation of sub-sectoral summaries).

The development summarized in Table 2 can be further analyzed in several ways; by products, by components of fixed capital investment, and by division of total capital investment into working and fixed, local and foreign origin, local and foreign expenditure.

TABLE 2 Manufacturing for the Years 1961-1970

(JD 000's)

	Consumption			Production					Investment in new plants		Additional Invest. in existing plants				
Year	Total (1)	Increase over previous year (2)	Imports (3)	Total (4)	Existing plants (5)	New plants (6)	Exports (7)	Import Required in Prod. (8)	Total (9)	Imported (10)	Total (11)	Imported (12)	Total Imported additional invest. Req. (cols. 10, 12) (13)	Total Foreign currency required (cols. 3-8 3-7) (14)	Value added (15)
1961	39,528	—	15,288	26,030	26,030	—	1,790	7,490	—	—	—	—	—	20,988	8,530
1962	41,422	1,894	15,358	27,845	27,845	—	1,781	8,094	—	—	—	—	—	21,671	9,125
1963	43,423	2,001	15,163	30,043	28,903	1,140	1,783	8,755	1,030	502	683	614	1,116	23,251	9,946
1964	45,567	2,144	15,179	32,173	31,246	927	1,785	9,443	1,263	462	479	297	759	23,596	10,702
1965	47,830	2,263	14,964	35,114	34,079	1,035	2,248	10,135	1,720	1,132	472	306	1,438	24,289	11,626
1966	50,219	2,389	15,017	37,620	36,722	898	2,418	10,846	655	337	671	384	721	24,166	12,418
1967	52,745	2,526	15,053	40,283	39,313	970	2,591	11,607	768	480	687	396	876	24,945	13,251
1968	55,365	2,620	15,155	42,975	42,078	897	2,765	12,410	480	269	1,156	854	1,123	25,923	14,068
1969	58,140	2,775	15,298	45,780	45,163	617	2,939	13,260	326	156	866	530	686	26,306	15,109
1970	61,086	2,946	15,464	48,733	48,406	327	3,111	14,182	389	218	1,191	685	903	27,438	15,829

All 1961 figures are actual, and obtained from the "National Accounts 1959-1961" constant prices are assumed for the entire period.

Increase in consumption assumed to be 4% per year (basis of 3% for population growth and 1% for increase in standard of living), for all sectors except petroleum (an increase of 10% per year) and non-metalic minerals & cement 8% per year, ceramics 5% per year, chemical fertilizers 10% per year, glass sheets 5% per year and other manufacturing 6% per year.

Col. 6 Production from new plants taken from applications for licenses and for loans submitted to Ministry of National Economy and the Industrial Development Fund, and from preliminary and feasibility studies.

Each year, the production of the new plants for the previous year becomes part of existing plants in the current year (i.e. moved from Col. 6 to 5).

Col. 8 Import requirements in production includes raw materials, fuel, etc. but not machinery and similar finished products.

Col. 9 Investment in new plants obtained from the application for licenses and loans, and from preliminary and feasibility studies.

Col. 10 Imported investment in new plants is total of all machinery and equipment to be purchased and 30.5% of cost of buildings. In 1961, 30.5% of cost of constructing buildings consisted of imports (iron rods, glass, etc.).

Col. 11 & 12 Estimated at 75% of the requirements in new plants (col 9 & 10) for the same volume of additional output.

Col. 15 Value added is assumed to be same proportion of total production (col 4) as in 1961.

New Products 1964-70

These are divided for convenience into six sub-sectors :

a) *Food and Feed*

Animal feed, biscuits, confectioneries, glucose and starch, dairy products, fruit and vegetable juices, table salt, yeast, refined sugar.

b) *Beverages and Tobacco*

Carborated beverages.

c) *Textiles and Clothing*

Woollen clothes, underwear, blankets, rugs, cotton piece-goods.

d) *Non-metallic Minerals*

Concrete pipes, ceramics, superphosphates, sheet glass, glass bottles.

e) *Petroleum Refinery*

(Already functioning; the refinery will require additional capital during the period).

f) *Other*

Cosmetics, pharmaceuticals, screws, shoe polish, rails, barbed wire, paper cartons, buttons, cleaning products, batteries, auto parts, cardboard, paint, building hardware, plywood, rope, truck and bus assembly, plastic electrical fittings, corrugated cardboard, round steel bars, and reinforced cement poles.

In addition to the products specified above, provision has been made in sectors (a) to (d) for manufactures of products as yet unidentified in later years of the Plan.

Fixed Capital

Estimates have been made of fixed capital requirements in each sub-sector. Table 3 summarizes these under machinery, land, and buildings.

TABLE 3 Fixed Capital Requirements (JD 000's)

	1964	1965	1966	1967	1968	1969	1970	Total
Machinery	825	1,396	782	859	1,090	657	894	6,503
Land	43	74	43	52	38	43	48	341
Buildings	251	322	195	288	215	188	258	1,717
Grand Total	1,119	1,792	1,020	1,199	1,343	888	1,200	8,561

Distribution of Capital

Table 4 shows industrial capital requirements broken down: (a) between fixed and working; (b) between foreign and domestic sources; (c) between foreign and domestic expenditures.

TABLE 4 Capital Distribution (JD 000's)

	1964	1965	1966	1967	1968	1969	1970	Total
Fixed Capital	1,119	1,792	1,020	1,199	1,343	888	1,200	8,561
Working Capital	623	400	306	256	293	304	380	2,562
Foreign Sources (¹)	312	430	290	326	409	228	396	2,461
Domestic Sources (¹)	1,450	1,762	1,036	1,129	1,227	894	1,184	8,662
Spent abroad (²)	759	1,438	721	876	1,123	688	905	6,508
Spent in Jordan (²)	983	754	605	579	513	504	677	2,615
Total	1,742	2,192	1,326	1,455	1,636	1,192	1,580	11,123

(1) For the division between foreign and domestic sources, it has been assumed that the former will provide (partly in the form of machinery credit) 18 per cent of total capital requirements in 1964 rising to 25 per cent by 1968 and remaining at that figure thereafter. Of the balance 25 per cent is assumed to be available from the Industrial Development Fund leaving 57 per cent in 1964 declining to 50 per cent by 1968 to come from private investors.

(2) The proportion of capital to be sent abroad is estimated at the total cost of machinery plus 30.5 per cent of cost of buildings, based on empirical analysis of recent experience.

Requirements to achieve objectives

The following action is required to bring about the economic and institutional climate in which private enterprise can be expected to achieve the foregoing goals in manufacturing industry : -

a) Re-organization of the Government structure insofar as it impinges on industry.

b) Restructuring of the Ministry of National Economy to make it a more fully effective promotional and advisory agency for industry.

c) Creation of a Standards Bureau.

d) Creation of a Shares Committee for Government-held shares in industry.

e) Restructuring and strengthening of the Customs and Excise Department.

f) Staff increase required for (a), (b), (c) and (d).

g) Effective promotion of foreign investment in Jordan.

h) Amendments to the laws governing customs duties, taxation, and encouragement of industry.

i) Transforming the Industrial Development Fund into an Industrial Development Bank with sufficient capital resources to enable it to provide credit amounting to approximately 25 per cent of total investment in industry.

Re-organization of Government structure relating to industrial development

The following Government agencies are currently concerned with this sector : -

a) *Ministry of National Economy* (Industrial Section). Issuance of licenses to set up new firms; recommendation (to Supplies, Import and Export Department) of import licenses for machinery; implementation of laws governing encouragement of industry; participation in decisions on tariff protection and on government investment in industry.

b) *Supplies, Import and Export Department* (reports to Minister of National Economy). Issuance of import licenses.

c) *Ministry of Finance*. Participation in investment of government funds in industry.

d) *Customs and Excise Department* (Reports to Minister of Finance). Participation in decisions on tariff protection.

e) *Jordan Development Board* (Planning Department). Responsible for the industrial sector in overall planning and review; recommending contracts for feasibility studies; promotion of industry.

f) *Industrial Development Fund* (Loans Committee reports to Development Board). Scrutiny of loan applications; management of small revolving loan fund. These functions will be taken over by the Industrial Development Bank.

Thus the potential industrialist may have contact with any number up to six government agencies during the process of evaluating and setting up his enterprise, without any necessary co-ordination among those agencies, and it is almost inevitable that government decisions affecting his enterprise will be delayed, and will be mutually inconsistent.

Proposal 9-1. *Re-organization of the Industry Section*

The Industry Section in the Ministry of National Economy should be reorganized and expanded to become "The Industry Directorate", which should comprise sections to undertake the following tasks and to be responsible for : -

1) Studying applications for the establishment of new industries and taking appropriate decisions based on their economic feasibility, prohibiting the setting-up of industries unless approved by the Council of Ministers and formulating industrial policy by regulations issued by the Council of Ministers or instructions issued by the Minister.

2) Studying applications for the expansion of existing industries.

3) Issuing the requisite recommendations for the importation of industrial machinery and equipment.

4) Studying the requests of industrial establishments for facilities and exemptions granted in accordance with current legal provisions and making appropriate recommendations thereon to the authorities concerned.

5) Supervising and controlling industrial establishment to insure the implementation of the Ministry's policy in the industrial field in conformity with the existing laws for the guidance and encouragement of industry.

6) Extending technical advice for industrial establishments.

7) Organizing the management of industrial establishments on modern scientific basis.

8) Supervising the training of industrial workers and managers in order to supply them with the requisite technical skills for operating and managing their industrial establishments and for marketing their products.

9) Setting-up standardized specifications for industrial products.

10) Participating with the concerned institutions in guiding and encouraging vocational and commercial training.

11) Preparing studies relating to the costing aspects of industrial production.

12) Preparing the necessary studies for protecting industrial production by tariffs and other means in co-operation with the Ministry of Finance/Customs.

13) Encouraging the investment of local and foreign capital, and studying the applications of foreign investors to participate in Jordanian industrial undertakings, and making recommendations thereon to the authorities concerned.

14) Preparing lists of national industrial products for the purpose of trade agreements.

15) Issuing certificates of origin and certificates of value added relating to Jordanian industrial products.

16) Determining the prices of local industrial products.

17) Participating in the execution of projects aimed at the development of tourism, especially those projects related to the encouragement of handicraft industries.

Proposal 9-2. *Creation of a Standards Bureau*

For the protection of consumers and the safeguarding of quality standards for exports, a Standards Bureau should be set up to report to the Minister of National Economy. The Bureau should be required to :

1) Standardize and inspect weights and measures.
2) Spot-test food products for possible ill-effects on health.
3) Spot-test advertised specifications of products to ensure that the product corresponds to the advertisements on the wrappers or packages.
4) Conduct analyses, upon request, at cost.
5) Establish quality standards for exports for certain products.

Close co-ordination will be necessary with the Agricultural Marketing Bureau of the Ministry of Agriculture.

Proposal 9-3. *Re-organization of Customs and Excise Department*

The complex of tariff protection, excise duties, customs drawbacks, etc., and the anticipated expansion of the industrial sector will throw great strain on the Customs Department. Moreover, the present method of collection of revenue is cumbersome and time-consuming. Action is required :

1) To increase the Department's staff progressively to meet increasing demands

2) To examine and overhaul, as early as possible in 1964, the collection procedures of the Department.

Proposal 9-4. *Staff Increase in Government Departments*

Arising from the foregoing proposals, staff increases will be required in the Industrial Directorate of the Ministry of National Economy (including the new Bureau of Standards) and the Customs Department as follows : -

TABLE 5 Ministry of National Economy — Industry Department Additional Staff 1964-1970

	1964	1965	1966	1967	1968	1969	1970	Total
Accountants	1	—	1	—	—	—	—	2
Economists / Statisticians	1	—	5	—	—	—	1	7
Engineers	1	—	3	1	1	—	—	4
Clerks / Typists	1	1	2	—	—	—	—	4
Business Administrators	—	—	1	—	—	1	—	2
Total	4	1	12	—	—	1	1	19

TABLE 6 Standards Bureau — Staff Required 1964-1970

	1965	1966	1967	1968	1969	1970	Total
Engineers	3	4	2	2	1	1	13
Lawyers & Administrators	1	—	—	—	1	—	2
Accountants/Economists	—	—	—	1	1	—	2
Statisticians	1	—	—	1	—	—	2
Clerks/Librarian	1	1	2	—	1	—	5
Others	1	2	2	1	1	1	8
Total	7	7	6	5	5	2	32

Equipment costs of the Bureau are estimated at JD 130,000 over the period 1965-1970.

TABLE 7 Customs Department — Additional Staff Required 1964-1970

	1964	1965	1966	1967	1968	1969	1970	Total
Administration	—	—	3	—	—	—	5	8
Customs centers	20	6	30	—	10	10	10	86
Factory Staff	20	20	5	5	5	—	10	65
Airport Staff	—	—	—	—	4	—	—	4
Total	40	26	38	5	19	10	25	163

Proposal 9-5. *Overseas Promotion*

It is necessary to have commercial attaches in our embassies to promote Jordanian industrial products in foreign countries, and to encourage foreign capital and "know-how" to come to Jordan. The Commercial Attaches should be members of the Ministry of National Economy, although responsible to the Ambassador for local arrangements in the country or countries for which they are responsible.

Proposal 9-6. *Amendments to Laws*

The present legislation affecting industrial development has been enacted at different times and for different reasons, and its overall effect on development has never been evaluated. As early as possible the proposed Industrial Policy Advisory Council should carry out a comprehensive review of all legislation which affects industry directly or indirectly, and recommend to the Council of Ministers any amendments required to ensure that the legal structure and administration activity assist and encourage industrial development.

Proposal 9-7. *Provision of Credit to Industrial Enterprises*

Independent expert opinion has confirmed the local view that the greatest single obstacle to private industrial development in Jordan is lack of access to long-term capital on suitable terms. The World Bank Mission in 1957 recognized this and attributed the reasons to capital scarcity, liquidity preference, relatively high profitability of commerce and real estate, and lack of an organized capital market. The most significant of the comments of the World Bank Mission emphasized the difficulty of attracting private investors into the relatively new and untried industrial field. A study prepared for the International Labor Organization in 1962 indicated a principal entrepreneurial difficulty as "obtaining long term money at a low rate". The Five Year Plan for Economic Development prepared by the Jordan Development Board in 1961 postulated "an urgent need for a greatly expanded and a more appropriately organized system for supplying development credit to industry and related sectors of the economy".

It is not only private capital which has to be attracted, but also entrepreneurial ability. Jordan's resources are so scarce to leave any unused. This is not an argument for unlimited provision of credit to anyone who aspires to set up an industrial undertaking, but a recognition of the need for public action to provide a small, but crucial, part of industrial credit — crucial because its provision, in itself, indicates careful appraisal of a project and confidence in its outcome, thereby attract in a much larger element of private investment. Two things are needed to bring this about — sufficient funds, and a suitable agency. Jordan already has the nucleus of a suitable agency with experience in the form of the Industrial Development Fund and its successor, the Industrial Development Bank. The history of the Fund, and the potentiality of the Bank are described in a separate note at the end of this chapter. For the purpose of this proposal, it is enough to note the amounts involved. From Table 4 it is seen that total capital investment, fixed and working, is planned to be JD 11.123 million over the seven years. On the assumption that the Bank will provide 25 per cent of this capital, it must make available the following credit :

TABLE 8 Credit to be Provided by the Industrial Development Bank (JD 000's)

	1964	1965	1966	1967	1968	1969	1970	Total
Total investment	1,742	2,192	1,326	1,455	1,036	1,192	1,580	11,123
To be provided by IDB	435	548	331	364	409	298	395	2,780

The Program for Industry will involve some direct increases in employment, notably in skilled and semi-skilled categories. The following table shows the scope of industrial employment in main employment categories in the private sector between 1961/70. The figures in 1961, 1962 and 1963 probably overestimate the number of technical staff actually employed because they were developed from a sample of 10 firms which are above average in organization and in the use of technically qualified staff. Nevertheless these data are an indication of the desirable numbers in each category. There is no doubt that Jordanian industry will have to employ a larger proportion of its workers in the skilled categories if it is going to achieve the levels of production envisaged in this Program. Increasing levels of technology, the demands of consumers for improved quality control, plus the desire for profits and efficiency, are all working in the direction of more technically trained personnel.

THE INDUSTRIAL DEVELOPMENT FUND

The program for manufacturing industry in 1964/70 assumes that 25 per cent of the total capital invested in this sector will be available from a public credit-giving agency; i.e. out of JD 11.1 million investment, JD 2.8 million should be so available. A similar assumption is made in the program for tourism, where 30 per cent of fixed capital requirements — JD 2.9 million out of a total of JD 9.7 million — are expected to be available to entrepreneurs who can demonstrate the likelihood of successful development. The total funds, by years, required in public credit for these two sectors alone, are therefore :

TABLE 9 Public Credit Requirements 1964-1970 (JD 000's)

	1964	1965	1966	1967	1968	1969	1970	Total
Manufacturing	435	548	331	364	409	298	395	2,780
Tourism	270	330	510	480	480	480	360	2,910
Total	705	878	841	844	889	778	755	5,690

Jordan now possesses a suitable credit-giving agency in the form of the Industrial Development Fund. This Fund was created on August 1, 1957 as an appendage of the Jordan Development Board. It resulted from combining the financial resources of three projects of the Government of Jordan which had been initiated with the cooperation of the United States Operation Mission (USOM). USOM provided technical and financial assistance totalling JD 485,303 in the form of loans for (1) the development of the tourism resources of Jordan by the construction of new hotels and/or the improvement of existing ones, and (2) the establishment of new industries and/or the improvement of existing ones.

The Fund is administered by a Project Supervisor and an Industrial Loan Committee. The Committee approves or rejects these applications referred to it by the Project Supervisor. The Committee consists of the Minister of National Economy, the Under-Secretary of National Economy, a representative of the Jordan Development Board, and an employee of the Jordan Development Board.

Approximately 48 per cent of the loans granted to date have been for hotels and purposes related to tourism, and 52 per cent for manufacturing industry. Three-quarters of the loans were for amounts under JD 3,000 and one-half under JD 1,000. The larger loans went for the financing of hotels, the largest being for JD 62,000. The largest industrial loan was JD 30,000. Almost half of the loans were for periods of five years or less; no loan has been granted for more than ten years. The rate of interest, originally 4 per cent, was later raised to 5 per cent, then to 6 per cent in 1962.

Since the formation of the Fund, loan policies have been fairly strict. The Fund does not make agricultural loans, though it has financed industrial development related to agriculture such as oil pressing. Industrial loans are granted only for the purpose of buying machinery, not for buildings or working capital. In the case of hotels, however, loans are granted for construction, furniture and equipment. The collateral requirement for loans over JD 1,000 is a first mortgage on immovable property or a bank guarantee; for loans less than JD 1,000, a financially responsible and acceptable co-signatory is required. Not more than 40 per cent of the cost of any project has been advanced as a loan by the Fund.

These conditions are only partly related to financial prudence; more important has been limitation of funds as against feasible applications. The Project Supervisor estimated that during the period 1959 to 1962, when loans totalling JD 359,220 were approved, a further JD 1,003,979 of feasible and sound loan applications had to be refused because of the lack of funds.

As of March 31, 1964 the original grants of funds from USOM of JD 485,303 together with loan repayments of JD 297,206 and interest payments of JD 115,210 provided total funds for loans and expenses of JD 897,719. Loans totalling JD 823,675 have been granted. Expenses over the period were JD 28,168. The balance available for lending on March 31, 1964 was only JD 19,906. As loan repayments and interest income are received, they are loaned again to the business community. Thus the Fund has become a revolving fund.

The effect of setting up the Fund is clearly shown in the following figures; at the time of its creation in 1957, collection of amounts due were at an extremely low level which since have been progressively improved. This is shown by a two year moving average of capital repayments calculated as a percentage of amounts due, as follows :

1954/55 — 69% 1955/56 — 72% 1956/57 — 44% 1957/58 — 22%
1958/59 — 53% 1959/60 — 96% 1960/61 — 97% 1961/62 — 98%
1962/63 — 92%

The Fund has clearly showed itself to be an efficient agency for the channeling of development funds into manufacturing industry and tourism.

Proposal 9-8. *The Creation of an Industrial Development Bank*

A draft law for the establishment of the Industrial Development Bank has been prepared by a committee to be submitted to the Council of Ministers and Parliament for approval.

The Bank shall be a predominantly private institution and shall be managed by :

a) *Board of Directors* : shall consist of three Government members and six members representing the private sector.

b) General Manager.

c) Deputy General Manager.

d) An executive establishment.

The objectives of the Bank are :-

a) To support and stimulate the establishment of new industrial enterprises and the expansion and development of existing ones which help increase employment and national income and improve the general economic situation in the Kingdom.

b) To encourage local small-scale industries and handicrafts through the establishment of cooperative societies and provide these societies with financial and technical assistance.

c) To encourage and promote ownership of Jordanian industrial securities.

The authorised capital of the Bank will be three million Jordan Dinars (JD 3 million) divided into three million shares of one Jordan Dinar each. The Government shall participate in the amount of one million Jordan Dinars (JD 1,000,000) by (a) transferring all assets liabilities and obligations of the Industrial Development Fund, and (b) the balance of JD 1,000,000 after transferring funds in accordance with (a) will be paid in four equal annual instalments as from the date of establishing the Bank. The remaining shares shall be floated for public participation in Jordan and abroad as voting preferred stock.

It is estimated that the additional capital requirements of the Bank will be as follows (JD 000's) : -

1964	1965	1966	1967	1968	1969	1970
375	640	440	310	250	150	100

Considering the importance the present Plan attaches to the development of industry and tourist sectors, creation of the Industrial Development Bank should be given high priority.

TABLE 10 Industrial Employment 1963-1970

	1963	1964	1965	1966	1967	1968	1969	1970
Trained manager and assistant managers*	319	332	345	373	403	534	470	508
Sales Managers	71	74	77	83	90	97	105	113
Plant superintendant	443	461	479	498	518	539	560	582
Grad. accounts (including cost accounts)	177	184	192	207	224	242	261	282
Chartered accountants	—	—	—	2	4	6	9	12
Cert. pub. accts.	124	129	134	139	145	151	157	163
Book keepers	921	958	996	1,036	1,077	1,121	1,165	1,212
Engineers and chemists	691	719	747	777	808	840	874	909
Draftsmen	195	203	211	219	228	237	246	256
Electricians and mechanics	2,339	2,433	2,529	2,629	2,735	2,845	2,957	3,760
Clerks	1,506	1,567	1,628	1,693	1,761	1,832	1,904	1,980
Labourers	29,193	30,356	31,592	32,824	34,174	35,400	36,883	38,314
Total	35,979	37,416	38,930	40,480	42,167	43,744	45,591	47,407

* 8% rate of increase has been assumed between the year 1966-1970.

SUMMARY

The following proposals specifically relating to manufacturing industry have been made in this Chapter.

Proposal 9-1

Re-organization and expansion of the industrial staff of the Ministry of National Economy, setting up an Industry Directorate within the Ministry.

Proposal 9-2

Setting up a Standards Bureau within the Ministry of National Economy.

Proposal 9-3

Re-organization of the Customs and Excise Department for speeding up collection procedures.

Proposal 9-4

Staff increases in the Directorate of Industry and Customs Department.

Proposal 9-5

Promotion of Jordan Industry by posting Commercial Attaches to countries abroad.

Proposal 9-6

Amendments to Laws affecting industrial development.

Proposal 9-7

Provision of adequate credit to industrial enterprises.

Proposal 9-8

Creation of the Industrial Development Bank with sufficient financial resources to provide credit to industry and tourism.

CHAPTER 10 *TRANSPORTATION*

Probably the greatest single economic problem facing Jordan in 1948 was the loss of its direct link with the Mediterranean Sea, and the consequent need for a comprehensive reorientation of transport facilities. Equally, the solution of that problem has probably been Jordan's greatest single economic achievement. The additional action required in 1964/70 amounts to filling a comparatively few gaps and strengthening the existing structure. It should not be forgotten; however, that the new orientation imposes a continuing burden on Jordan's economy, with particular regard to sea access : population and therefore consumption are concentrated in an area bounded roughly by Zerka, Jerusalem, Jenin and Irbid, i.e. in the north of the country, new phosphate and potash production are further south but still distant 211 and 186 km, respectively from the only sea outlet in the extreme south. It is clearly vital to the economy that this built-in handicap should be offset in the greatest possible degree by careful planning and wise utilization of transport facilities.

The major objectives in the field of transport are the encouragement of tourism and the provision of low-cost transport for imports and exports, with emphasis on the latter. Gaps which require filling in relation to the Plan's objectives are :

1) There is no road link between the potash project site at Safi and Aqaba Port;

2) there is no rail link between the phosphate sites at El-Hasa and Ruseifa and Aqaba;

3) loading facilities at Aqaba are insufficient for planned exports;

4) with the expected increase in volume of air traffic, extension and improvement of present airports is a necessity.

Jordan's international trade in 1962 showed the following directional pattern :

TABLE 1 Jordanian International Trade Traffic in 1962 (All Figures in 000 tons)

	Via Aqaba	Lebanon or via Lebanon	Syria	Iraq	Kuwait	Saudi Arabia	Total
Imports	390	61	37	29	—	127	644
Exports	287	104	52	19	24	20	506
Total Trade	677	165	89	48	24	147	1150

It is important to consider Jordan's transportation system as a part of the overall Arab States communication system and to emphasize its complementarity to this system; around 67% (by value) of Jordan's exports go to the neighbouring Arab States. In 1962 around 187,246 tons of transit trade passed through Jordan for the Arab States and around 291,000 tons of Jordan's exports and imports, i.e. 23% of the total, passed through the Arab States as well.

The Plan for Transportation 1964/70 will be elaborated under the following five headings :

Civil Aviation

In Civil Aviation, Jordan has two main airports — at Amman and at Jerusalem — and small landing fields at Aqaba and Ma'an. Mafraq is a military airport. Improved facilities at Jerusalem and Amman will be required to accommodate the rapidly growing number of tourists and Jordanian citizens using these airports.

Meteorology

The services of meteorology and the studies of specialists in this field are of vital importance for the safety of air and sea travel. This is in addition to other services rendered by the Meteorological Department for the preparation and implementation of economic development programs especially those related to the extension of arable lands by making available the required meteorological data on rainfall, temperature, evaporation and transpiration. Moreover, the Meteorological Department will make available the climatological data to agronomists for helping them in finding the links between plant diseases and different weather elements.

It also contributes in combatting locusts and the protection of crops against pests and it shares in the research studies of the arid zones for land reclamation.

Meteorological data are also given to public works authorities, to official and private civil engineering undertakings in connection with hydro-electric projects, town planning, etc.

Roads

Jordan's network of roads consists of 3,350 km. of maintained (main and secondary) roads, of which 2,200 km. were asphalted by 1963.

A number of roads require construction because of the following reasons : -

1) Completion of inter-Arabian land roads inside Jordan.

2) Filling the gaps in the road network that would help move Jordan's agricultural products.

3) Linking the potash site at Safi with the Port of Aqaba.

Jordan's program for road construction within the last years has necessitated an increase of road maintenance allocations.

Ports

As Jordan's only seaport, the Port of Aqaba must have adequate facilities and organization in order to permit the expeditious and low-cost movement of both imports and exports. Tonnage handled has increased steadily from 145,000 tons in 1956 to 549,000 tons in 1962, and is expected to be over 3 million tons in 1970.

Railways

Jordan railways have no direct connection to the Port of Aqaba, as the present terminus of the railway, in Nagab, is 100 kms. from the Port. Existing tracks and rolling stock are for the most part antiquated. Adequate rail facilities will be required ultimately to move Jordan's bulky exports, particularly phosphate, to Aqaba.

A. CIVIL AVIATION PLAN 1964-70

Overall Objectives

Civil Aviation facilities in Jordan must be such as to :

a) Enable the targets set in the Plan for Tourism to be attained by providing speedy, comfortable and safe access to the Kingdom by air.

b) Encourage two-way business and other non-tourist contacts with other countries by the same means.

c) Make possible the development of air-freighted exports, for example out-of-season fruits and vegetables, to markets abroad.

Requirements to Achieve Objectives

The following action is required :

a) Extension and improvement of airports.
b) Recruitment of additional staff by Civil Aviation Department, and provision of training locally and abroad to existing and new staff.
c) Provision of new and improvement of existing flight-safety facilities.
d) Internal reorganization of the Civil Aviation Department.
e) Liaison with neighbouring Arab States in the Civil Aviation field.
f) Improvement of passenger-handling procedures.
g) Passing of legislation necessary to efficient functioning of the Civil Aviation Department.

Proposal 10-1. *Extension of Airports*

As mentioned in the Chapter on Tourism, the number of visitors to Jordan is expected to increase greatly and a greater proportion will travel by air. Calculating from the expected number of tourists and an increase from 45% to 55% in air arrivals, the development of air traffic in this sector will be as follows :

TABLE 2 Tourist Air Arrivals 1961-1970

Year	Total Tourists	% of Tourists Arriving by air	Number arriving by air Total
1961	162,958	50	81,011
1962	209,942	45	94,109
1963	323,000	45	145,350
1964	378,000	45	170,100
1965	430,000	45	193,500
1966	494,000	50	247,000
1967	568,000	50	284,000
1968	653,000	55	359,150
1969	752,000	55	413,600
1970	827,000	55	454,850

Source : Planning Division / JDB computations 1963.

During the period 1961/63, Jerusalem airport handled 72% of arrivals. Amman Airport currently receives four direct flights weekly from Europe, but with the steadily increasing size of planes on inter-continental flights, the present runway will not be adequate indefinitely. Since Jerusalem's Airport capabilities for expansion are limited due to terrain, Amman Airport must be regarded, particularly in reference to long distance flights, as the airport most capable of being modified in a manner that will conform to expected technological change toward larger aircraft.

Jerusalem Airport, handling the greater part of tourist air traffic (see Table 2) cannot be developed to handle intercontinental aircraft because of its topographical situation. However, improvements now being proposed would make possible flights within a 1,000 miles radius, thus including among others, Istanbul, Baghdad, Basra, Jedda, Cairo and Kuwait.

Extension and improvement of Amman Airport will begin 1967. Meanwhile, Jerusalem Airport extension will begin in 1966.

Aqaba Airport is given third priority in this plan. Because of the expected increase in internal traffic to Aqaba and the possibility of its expansion, a consultant should be asked to advise on developing the airport to grade (F) with the intention of possible upgrading it to grade (D) level.

As for Ma'an airport, there is no apparent need for its expansion. However, Mafraq military airport should always be considered as an emergency airport. The additional possibility should be studied of making Mafraq airport ordinarily available for diversion in the event of bad weather at Amman, to avoid loss of tourist traffic to the country.

The following budgetary allocations are needed during the Seven Year Plan for the improvement and extension of Amman, Jerusalem and Aqaba airports :

TABLE 3 Expenditure on Airports (JD 000's)

	1964	1965	1966	1967	1968	1969	1970
I. *Capital Expenditures*							
Jerusalem Airport	—	—	600	615	474	180	—
Amman Airport	50	154	—	—	500	1500	1000
Aqaba Airport	—	—	—	—	120	129	46
Total	50	154	600	615	1094	1809	1046
II. *Recurring Expenditure*							
Maintenance	34	31	35	40	40	40	40
Others	76	82	165	264	362	375	390
Total	110	113	200	304	402	415	430

Improvements in the Present Organization

Proposal 10-2. *Personnel of Civil Aviation Department*

At present 69 professional, administrative and technical staff are employed in Civil Aviation. Over the seven years a total of 97 additional staff will be required, most of them by 1966 to coincide with completion of Amman airport extension. Number and types of new staff required in each year are as follows :

TABLE 4 Additional Staff, Civil Aviation Department 1964-1970

	1964	1965	1966	1967	1968	1969	1970
Civil Engineers	—	—	2	—	1	—	—
Surveyors	—	—	1	—	—	—	—
Supervisors	—	—	4	—	2	—	—
Mechanical Supervisors	—	—	2	—	2	—	—
Maintenance Technicians	—	—	12	12	12	8	8
Telecommunications	5	5	6	6	4	2	2
Draftsmen	2	—	1	—	1	—	—
Air Traffic Controllers	5	5	6	6	6	6	6
Air Safety Controllers	3	1	1	1	1	—	—
Mech. and Electrical Assist.	5	3	6	4	4	4	—
Others	—	—	8	8	8	—	—
Total	20	14	49	37	41	20	16

Foreign training required

Most of the deficiencies existing in Civil Aviation are not due to lack of equipment, buildings or airfields but are the result of a serious lack of trained staff, particularly reliable supervisors. The number of staff receiving training abroad in each year will be as follows :

TABLE 5 Foreign Training, Civil Aviation Staff 1964-1970

	1964	1965	1966	1967	1968	1969	1970
Air traffic control	1	1	1	1	1	1	1
Telecommunications	1	1	1	1	1	1	1
Radio and aerodrome engineer	1	1	1	1	—	—	—
Radio maintenance	1	1	1	1	1	1	1
Civil Aviation administration	1	2	1	2	1	—	1
Miscellaneous	1	—	—	—	—	—	—

Proposal 10-3. *Provision of New Facilities for Air Traffic*

a) Since a risk of collision exists when two or more aircraft fly through the same air-space without any coordinate of contact, it is recommended that an area control center should be established in Amman and given highest priority.

b) By 1965, a Remote Receiver Station should be established in Amman area.

c) A lightweight fire and rescue vehicle should be added to existing facilities at Jerusalem Airport, and the provision of a foam carpet at Mafraq should be expedited.

Proposal 10-4. *Internal Reorganization of the Civil Aviation Department*

The Civil Aviation Department should pursue the following projects :

a) Completion of rules of the Air and Air Traffic Control section of Aeronautical Information Publication (AIP); edit and publish the AIP.

b) By 1965, a local training unit for the purpose of providing basic training in the following fields should be set up.

- i) Air traffic controllers,
- ii) Radio maintenance mechanics,
- iii) Teleprinter maintenance mechanics,
- iv) Diesel/electric and motor transport mechanics,
- v) Telecommunications operators (wireless and teletypist).

c) A small legal Section should be established by 1965 with the following functions :

- i) Interpret and edit the new draft law,
- ii) Write, regulations supplementing the law.

d) By 1965, a Safety Section should be established for the following purposes :

- i) Supervise personnel licensing,
- ii) Aircraft registration,
- iii) Aircraft maintenance, inspection for air worthiness,
- iv) Accident investigation and incident report,
- v) Maintenance of flight operations standards.

Proposal 10-5. *Improvements in existing practices*

First and last impressions are important; it is essential to the tourism industry that tourists arriving in and departing from Jordan are handled at airports with the maximum courtesy and despatch. Accordingly, the Department of Civil Aviation should carry out a study early in 1964/65 of possible ways in which the handling of air passengers, and their baggage, can be improved, attention should be given to methods in use in other countries, particularly those with significant tourist income.

Proposal 10-6. *Legislation*

a) A revised Civil Aviation Law has already been supplied in draft form by a legal expert of the International Civil Aviation Organization. The Department should translate it into Arabic and edit it in the correct format for local usage. Civil Aviation Regulations must be promulgated on many subjects. These will require the services of a legally trained officer.

b) The new Civil Aviation Law enacted in Jordan should permit regulations governing the operations of an Air Transport Licensing Board. The nearest approach to this in the past has been the establishment of a High Council for Civil Aviation but its method of operation has been different from that of a normal licensing board. In particular it has been characterized by a policy of close protection for a "national airline".

Jordan has a great potential tourist industry to foster and this can best be done by removing restrictions and liberalising the policy concerning traffic rights. Regulations governing the establishment and operation of an Air Transport Licensing Board should be framed to accomplish these objectives.

B. METEOROLOGICAL SERVICES PLAN 1964-1970

Objectives :

Meteorological Services must be such as to : -

1) Contribute to safety, regularity, and efficiency of local, international and military air and water navigation.

2) Contribute to safety of navigation at Aqaba Port.

3) Contribute generally in the process of construction and development planning.

4) Contribute in specific Jordanian development projects with special emphasis on agricultural and hydraulic requirements of Ghor and arid regions.

Requirements for achieving objectives

Efficient provision of these services will require :

1) The recruiting and training of additional staff;

2) The procurement and installation of necessary meteorological instruments and equipment and of adequate library facilities.

Proposal 10-7. *Staff Recruitment and Training*

The following is the additional technical and professional personnel needed during the plan by the Meteorological Department.

TABLE 6 Additional Staff, Meteorological Department 1965-1970

	1965	1966	1967	1968	1969	1970
1. Administration	—	1	3	1	—	—
2. Synoptic Meteorology	6	5	3	1	—	—
3. Agro-Meteorology	—	5	2	2	2	1
4. Climatology	—	2	1	1	1	1
5. Telecommunications	—	3	3	3	1	—
6. Research	—	1	1	1	—	—
7. Mechanical electricians	—	1	1	—	—	—
Total	6	18	14	9	4	2

Training required

All technical personnel, excluding those of telecommunications, must take an observers course held locally. In addition foreign training is required during the plan, the following numbers of staff will receive training abroad in each year : -

TABLE 7 Foreign Training, Meteorological Staff 1965-1970

	1965	1966	1967	1968	1969	1970
1. Administration	—	2	—	—	—	—
2. Synoptic Meteorology	2	4	5	3	2	3
3. Agro-Meteorology	—	1	1	2	2	—
4. Climatology	—	2	2	1	1	1
5. Telecommunications	—	1	2	1	—	—
Total	2	10	10	7	5	4

The following table contains the recurring expenditure of the expanded department including the provision of an appropriate library and workshop.

TABLE 8 Recurring Expenditure,* Meteorological Department 1964-1970 (JD's)

1964	1965	1966	1967	1968	1969	1970
48,917	56,650	65,200	69,140	70,170	71,230	71,500

* Includes technical and field allowances for some staff.

Proposal 10-8. *Additional Equipment Required by the Meteorological Department*

The Department will require equipment in the form of tools, cameras, furniture, instruments, carpenters, vehicles, and V.H.F. radio-telephonic equipment as follows :

TABLE 9 Cost of Equipment, Meteorological Department 1964-1970 (JD's)

1964	1965	1966	1967	1968	1969	1970
5,978	9,400	20,000	30,130	30,000	30,310	30,270

Proposal 10-9. *New Buildings Required by Meteorological Department*

New buildings will be required to the extent of 400 sq. metres in Amman and 70 sq. metres in each of Bakoura, Tulkarm, Shobak, and Arroub. Annual costs are :

TABLE 10 Cost of New Buildings, Meteorological Department 1965-1970 (JD's)

1965	1966*	1967	1968	1969	1970
2,400	10,000	1,500	—	1,500	—

* The increase of allocations in 1966 is justified as follows :- An amount of JD 10,000 was transfered from 1964 allocations to those of 1966 because the building was not constructed in 1964.

Proposal 10-10. *Legislation*

The enaction of a law establishing an independent department for meteorology to report to the Minister of Communication (Port, Aviation, Railways) directly. This department will be responsible for all work relating to meteorology in the Hashemite Kingdom of Jordan.

C. ROAD CONSTRUCTION AND MAINTENANCE PLAN 1964-1970

Objectives

The overall objective is to complete construction and maintain the present road system and improve it where necessary, to meet the increased demand for road transport facilities resulting from the implementation of the Seven Year Plan.

Requirements to achieve objectives

In order to achieve these objectives, the following action is required :

a) Capital expenditure on building new roads and improving existing roads.

b) Increasing maintenance allocations.

c) Improvement operation of the Public Works Ministry by :

  i) Completing the recruitment of the professional staff and giving foreign training to some of the staff;

  ii) Internal re-organization of the Ministry's staff;

  iii) Passing legislation required to make the Ministry fully effective.

Proposal 10-11

The amounts in Table 11 are required for the construction of new roads and improvement of existing roads, distributed for each year of the Plan.

The other approved roads included in Table 11 comprise a number of public roads network which require construction in accordance with the plan of the Ministry of Public Works.

Proposal 10-12. *Maintenance of Roads*

The large road network resulting from previous and planned expansion of road facilities, will increase the total length of the asphalted highway net-work from 2,200 km. in 1963 to 3,350 km. in 1970. This network requires an increase in recurrent expenditures as shown in Table 12.

TABLE 11 Expenditure on Road Construction & Improvement (JD 000's)

	1964	1965	1966	1967	1968	1969	1970
Road							
1. Ramtha, Amman, Jerusalem	30	149.8	100	100	100	—	—
2. Hebron, Bethlehem, Jerusalem, Nablus	—	483.7	—	50	50	100	100
3. Qatrana, Karak, Safi	60	159.5	100	80	50	50	—
4. Mafraq, Jerash, Kufranja, Kuraimeh	70	50	80	50	100	150	150
5. Shuna North, Damia Junction, South Shuna	—	586	—	50	50	—	—
6. Amman, Ma'an, Aqaba	30	30	100	100	50	—	—
7. Tafileh, Rashadiyah, Shoubak, Wadi Mousa	21	30	100	50	—	50	100
8. Other Roads	130	508.8	220	120	100	150	150
Total	341	1997.8	700	600	500	500	500
9. Safi-Aqaba	—	—	500	800	1000	950	—
10. Ma'an, Mudawarah	—	27	700	800	500	—	—
Grand Total	341	2024.8	1900	2200	2000	1450	500

TABLE 12 Recurrent Expenditure on Roads 1964-1970 (JD 000's)

	1964	1965	1966	1967	1968	1969	1970
Maintenance	334	313	460	475	500	525	550
Right of way	10	10	10	10	10	10	10
Studies and Road Planning	—	—	20	20	20	20	20
Total	344	323	490	505	530	555	580

Proposal 10-13

To implement the foregoing, the Ministry of Public Works will require additional personnel as follows :

Specialization	Number 1964	Number 1965
Roads maintenance engineer	—	5
Structural engineer	1	—

Foreign training will be required for the following numbers and types of staff in the year stated : -

	1964	1965	1966
Road Maintenance Engineer	1	—	2
Road Program Engineer	—	1	—
Assessment and Costs Engineer	—	—	1
Traffic	—	—	1
Survey Engineer	1	—	—
Designs Engineer	—	1	—
Office Management	1	—	1
Surveying Equipment Repair	—	—	1
Total	3	2	6

Proposal 10-14. *Organization Study of Ministry of Public Works*

An organization study has already been made of the Ministry of Public Works. Its conclusions should be adopted as soon as possible to ensure effective operation at minimum cost. Specifically, the following actions should be given emphasis in the suggested organization.

a) The work of the road construction and maintenance divisions must be restricted within the scope of their responsibilities whether they may be at the ministries head centres, or in districts or sub-districts.

b) The cost accounting section should be more effective in its operation.

c) The establishment in the maintenance division of a section whose task would be to study traffic subjects, and undertake road marking and signs.

Proposal 10-15. *Legislation*

Legislation is needed to define the responsibility of the Ministry of Public Works for roads. This should help the Ministry to program the construction and maintenance of roads under its jurisdiction. Such revision of the law should help to define right-of-way acquisition, and determine advertisement regulations and encroachments on roads. The law will clarify all issues pertaining to public interest and safety.

D. PORT OF AQABA PLAN 1964-1970

Overall Objectives

1) The Port of Aqaba must be able to accommodate the movement on ship of the following exports :

a) Phosphates : from around 250,000 tons in 1963 to a rate over 2,000,000 tons in 1970. It is to be mentioned that the present loading capacity of the port is half million tons per annum. Already, and as a first stage, there have been established stores with a capacity of 40,000 tons. The second stage, when implemented, will realize the building of stores with 60,000 tons capacity and the requisite pavements and loading machinery for phosphate loading into ships. This stage shall render it possible to export an additional quantity of 650,000 tons of phosphate. The estimated cost of this stage is JD 1,500,000 to be financed by a loan from the German Development Bank in accordance with a loan agreement now being negotiated between said Institution and the Jordan Development Board. A preliminary study of this project has been undertaken by the British Consultants Rendel, Palmer & Tritton Co. who will undertake final study of the project as soon as the loan agreement is signed. The third stage of the project that realizes the final target as defined in the plan necessitates an allocation of a further JD 1,500,000.

b) Potash : 500,000 tons per year starting in 1968. This target implementation requires JD 1,000,000.

c) Other exports : regarding this item, the present possibilities of the port can secure the export of 300,000 tons without any expansion.

2) The Port at present receives approximately 400,000 tons of goods per annum. This quantity represents all sorts of imported goods. The present off-loading capacity of the port is 800,000 tons per year. This by far exceeds the present rate of imports and thus shall cover imports even after 1970.

3) The Aqaba Port Authority adopts a special pricing policy that enables it to cover its operational and other expenditures from annual revenues. The Authority, however, imposes a reduced tariff on each ton of exported phosphate. The same reduced rate shall be imposed on potash to be exported in 1968. This policy is intended towards the full exploitation of export markets.

Requirements for achieving objectives

In order to handle the foregoing tonnages at minimum cost but without subsidy, the following action is required :

a) Extension of Port facilities.
b) Improvements in Port organization.
c) Increases of Port personnel.

Proposal 10-16. *Extension of Port Facilities*

Great steps have already been made to improve and extend the physical facilities of Aqaba Port; the provision of low-interest loans by West Germany has been vital to this progress. Such improvement is a continuous process, and plans have already been approved, which resulted in the execution of the following projects during 1964 and early 1965, from the Port's funds.

a) Construction of an open-sided shed. Another shed of same design is still needed for the Port.

b) Development of roads and open storage. Improvements, however, are being carried out and work shall continue to conform with the needs of the general development of the Port.

c) Provision of fire-lighting facilities. The Port now has a private electrical generation unit which provides Aqaba with electrical supply besides the illumination of the hotel and its annexes. A further new electrical 400 KW generator has been imported to meet the increasing requirements for electric power. The Port is also equipped now with a whole fire unit, which, besides the task of port protection from fires, renders service to the town of Aqaba against fire hazards.

d) Extension of lighter-berth which now operates and will remain adequately so until 1970.

e) Extension of Aqaba town main water supply to the Port. The Port Authority has lately developed wells and water reservoirs that supply the town itself with water. Meanwhile the water supply project for the town on a big scale is being studied by the Central Water Authority. Detailed studies for further capital investment during 1964/70 are as follows :

TABLE 13 Port of Aqaba Development 1964-1970 (JD 000's)

	1964	1965	1966	1967	1968	1969	1970	Total
Port (General)	—	287	42	365	214	—	207	1115
Conversion Berth "A"	—	118	489	—	—	—	182	789
Phosphate Storage	173	536	—	—	—	500	—	1209
Railway Facilities	—	—	—	290	—	—	—	290
Totals	173	941	531	655	214	500	389	3403

In addition to these capital works, the Port Authority lays special emphasis on Aqaba town planning. The Authority's Director is himself the Chairman of Aqaba Town Planning Committee which now holds successive sessions to expedite the construction of a modern city equipped with such public buildings and facilities that conform with the prosperity of the Port and the increasing scope of its activities. Meanwhile, the establishment of a free port at Aqaba is now under consideration.

Proposal 10-17. *Improvements in Port Organization*

A study should be made with the aim of improving the Port's accounting methods. Meanwhile, the Customs Department should aim at facilitating goods delivery through simplification of customs regulations.

As regards the housing division for employees in the Authority, this division meets its intended purposes. Work is now underway in building three housing units for married employees, each of which consists of two floors made up of four flats. Two other compound blocks are being also built to accommodate single employees.

Meanwhile, rather difficult labor conditions in this remote part of the country necessitate a reasonable increase in pay scales of the employees to encourage them to raise their production standards. To further stimulate their interest in their work, requires the provision of adequate housing for each employee at reasonable rentals through the construction of additional housing units and whenever possible, by offering employees three-year contracts of employment.

Proposal 10-18. *Increases in Staff*

The following additional staff will have to be recruited during 1964/70 to meet the increased flow of traffic and provide the best possible service.

TABLE 14 Additional Staff, Port Authority 1964-1970

	1964	1965	1966	1967	1968	1969	1970
Skippers	—	2	2	2	2	2	2
Engine attendants	4	1	2	1	1	1	1
Fire servicemen	27	—	2	2	2	2	2
Electrical engineer	—	—	1	1	—	—	—
Boatmen	—	—	2	1	—	—	—
Mechanical engineer	2	—	1	—	—	—	—
Mechanist fitters and electricians	4	4	4	4	4	4	4
Chief engineer	1	—	—	—	—	—	—
Apprentices	4	4	4	4	4	4	4
Laborers	8	6	—	3	—	—	2
Civil engineer	—	1	—	—	—	—	—
Chemical engineer	—	—	1	—	—	—	—
Pharmacist	—	—	1	—	—	—	—
Physician	—	1	—	—	—	—	—
Sanitary controller	—	1	—	—	—	—	—
Chemical laboratory official	—	1	1	1	—	—	—
Assistant pharmacist	—	1	—	—	—	—	—
Total	50	22	21	19	13	13	15

Proposal 10-19. *Review of Port Legislation*

A study has been prepared of the present law relating to the Aqaba Port Authority; this should be considered forthwith and any necessary reforms instituted. Particular attention should be paid to the possibility of making the Port an autonomous organization. The Port should have authority to introduce penal rates for storage over reasonable grace periods to avoid unnecessary congestion in a port whose geographical situation makes this a particularly dangerous possibility.

E. RAILWAYS PLAN 1964-70

Overall objectives

The overall objective of the Plan for railways is to reduce the inherent disadvantage of distance of both producing and consuming areas from Jordan's only port by carrying major flows of traffic at least cost. This will require a continuation of building of new facilities and improvement of those in existence.

The main flows of traffic will be :

a) More than 500,000 tons of phosphate from Ruseifa and El-Hasa to Aqaba by 1965 and 2,000,000 tons by 1970.

b) Over 580,000 tons of imports from Aqaba to Amman and other major cities.

It is anticipated that all of the phosphates and a considerable proportion of the imports will move by rail by 1970.

While Amman, El-Hasa and Ruseifa lie on the present rail system, Aqaba does not. Any railway attempting to deal economically with these flows must reach Aqaba.

Requirements to Achieve Objectives

To achieve the above objective, the following action will be required :

a) Provision of rail service between the north and Aqaba.

b) Coordination of rail facilities between the north and Aqaba with the Damascus/Medina rail link now being reconstructed.

c) Improvements in organization of the present rail system.

Proposal 10-20. *Extension of Railway to Aqaba*

Assuming that the present rail link from the Syrian border through Amman to Ma'an near the Saudi Border (forming part of the Hejaz line shortly to be rehabilitated) will be available for Jordan's exports and imports, it is clear that connection of this line with Aqaba Port promises to solve the problem of low-cost movement of large quantities of exports and imports. When creating this link, the aim must be to make the minimum new investment to meet traffic needs, so that the railway management will have the best possible opportunity to earn net income which can be used in turn to make further necessary improvements in the light of increased goods traffic.

For the construction of Aqaba link a study, planning and designing of a railway joining Aqaba town with the Hittiyah station of the Hijaz Railway are now being carried out by a consulting firm. The estimated cost of studies and execution is JD 7,000,000 approximately.

To meet transport requirements adequately would necessitate the reconstruction and up-grading of that part of Hijaz railway extending from El-Hasa to Ma'an to enable it to carry 16 ton axle weight. The estimated expenditure for this work is JD 1,200,000.

TABLE 15 Expenditure for Ma'an, Aqaba Link Construction and Re-habilitation and Strengthening of Hasa-Hittiyah Railway (JD 000's)

	1964	1965	1966	1967	1968	1969	1970	Total
Ma'an, Aqaba link	—	113	2000	2500	2400	—	—	7013
Re-habilitation of Hasa Hittiyah Railway	—	—	200	500	500	—	—	1200
Total	—	113	2200	3000	2900	—	—	8213

Proposal 10-21. *The Hijaz Railway*

Arrangements are already in hand for the rehabilitation of the Hijaz Railway connecting Damascus and Medina, and crossing Jordan from north to south. Briefly, reconstruction will cost about JD 8 million and Jordan's share will be about JD 2.7 million. JD 800,000 has been allocated in 1963 and previous years and JD 300,000 will be allocated for each of the years 1964 and 1965 and JD 250,000 for the years 1966/70. These balances will be under call in case the Hijaz railway needs them; this will depend on the extent which operating revenues in the early years can contribute to amortization and on availability of funds from other sources.

TABLE 16 Jordan Contributions to Hijaz Railway Reconstruction 1964-1970

1964	1965	1966	1967	1968	1969	1970	Total
300	300	250	250	250	250	250	1,850

The above figure does not include capital costs for rolling stock. Reconstructing the line will include installation of a telephone and telegraph system and other necessary mechanization. However, 55 stations will be built; 14 wells will be dug; reconstruction of 7,000 culverts and bridges. This operation will entail the removal of 2 million M^3 of sand, the purchase of 750,000 sleepers and 23,010 tons of tracks.

The Medina line will restore rail facilities for transporting pilgrims to Medina, and improve the means of communication amongst the Arab States.

Proposal 10-22. *Coordination of Amman/Aqaba link with Hijaz Railway*

The motives for reconstructing the Hijaz line and for constructing a rail link to Aqaba are different; the former will restore a historic pilgrim facility; the latter is required to meet the new position created by Jordan's lack of access to the Mediterranean. There are obvious mutual benefits in the form of the traffic which the Aqaba line can offer the Hijaz line, and the reduction in new construction costs which the existence and proximity of the Hijaz line offer to the Aqaba line. Nevertheless, simply because of the differences of origin, it is desirable for the commercial relationships between them to be clarified. A committee should be set up not later than 1st April 1966 composed of representatives on the one hand of the Jordan Development Board, the Aqaba Port Authority and the Ministry of National Economy, and on the other hand of representatives of the Hijaz Railway, to endeavor to reach agreement on these matters.

Proposal 10-23. *Improvements in Organization of the Present Rail System*

Due to the comparatively slight usage of the present Jordan rail system, utilization of rolling track and locomotion is poor, the condition of the track leaves something to be desired in some places, and operational efficiency is generally low. A higher rate of utilization of resources resulting from the opening of both Medina and Aqaba extensions will require higher efficiency and, at the same time, provide the economic incentive for such improvement. That time is not far off and the recommendations of the organization study which were carried out under the auspices of the Federal Republic of Germany should be implemented forthwith.

They included the following : -

1) Renewal of railway line sleepers and the improvement of stations from Ruseifa to El-Hasa in addition to expenditure included in Table 17.

The additional expenditures are estimated at JD 2,700,000.

2) Purchase of locomotives, wagons, a crane and other equipment for JD 1,000,000 as per Table 17.

TABLE 17 (JD 000's)

	1964	1965	1966	1967	1968	1969	1970	Total
Renewal & sleepers for the line	—	—	100	650	650	650	650	2,700
Purchase of locomotives	—	—	—	500	500	500	—	1,500
Total	—	—	100	1,150	1,150	1,150	650	4,200

SUMMARY

A. CIVIL AVIATION

Proposal 10-1

Extension of Amman and Jerusalem airports and examination of need to improve Aqaba airport.

Proposal 10-2

Recruitment of additional staff and foreign training for staff of Civil Aviation Department.

Proposal 10-3

Provision of an Area Control Center, a Remote Receiver Station, and additional fire-fighting equipment.

Proposal 10-4

Internal re-organization of the Civil Aviation Department.

Proposal 10-5

Study of potential improvements in passenger and baggage handling techniques.

Proposal 10-6

Revision of legislation governing civil aviation.

B. METEOROLOGICAL SERVICES

Proposal 10-7

Recruitment of additional staff and foreign training for staff of Meteorological Department.

Proposal 10-8

Provision of additional technical equipment to the Meteorological Department.

Proposal 10-9

Provision of new buildings for the Meteorological Department.

Proposal 10-10

Legislation to create an independent Meteorological Department.

C. ROADS

Proposal 10-11

Provision of funds for new roads and improvement of existing roads.

Proposal 10-12

Provision of increased recurrent funds for maintenance of existing roads.

Proposal 10-13

Recruitment of additional staff and foreign training for staff of Ministry of Public Works.

Proposal 10-14

Implementation of recommendations of organization study of the Ministry of Public Works.

Proposal 10-15

Revision of legislation governing responsibility for roads.

D. AQABA PORT

Proposal 10-16

Extension of port facilities at Aqaba.

Proposal 10-17

Improvements in port organization.

Proposal 10-18

Recruitment of additional staff to Aqaba Port Authority.

Proposal 10-19

Revision of legislation governing Aqaba Port Authority.

E. RAILWAYS

Proposal 10-20

Extension of railway to Aqaba.

Proposal 10-21

Rehabilitation of Hijaz Railway.

Proposal 10-22

Coordination of Amman/Aqaba line with Hijaz Railway following its reconstruction.

Proposal 10-23

Improvements of the present railway network.

CHAPTER 11 *COMMUNICATIONS*

This chapter includes telecommunications,[1] postal services, and radio broadcasting.

Telecommunications and Post Office

Telephones. The number of telephones in use in Jordan has increased from 11,850 on January 1, 1957 to 26,998 on March 31, 1963, or an increase of 18 per cent per year. Not only has there been this absolute progress, but relative progress has been made as well. For example, the number of telephones per 100 population in 1957 and in 1962 in six Middle East countries were as follows :

	January 1st, 1957	January 1st, 1962
Egypt	.75	.91
Iraq	.85	.76
Jordan	.74	1.35
Lebanon	2.65	4.06
Saudi Arabia	.20	.42
Syria	.91	1.24

Source : "The World's Telephones", 1957 and 1962 Issues. American Telephone and Telegraph Company, New York.

Telephones in Jordan are of three types : the old magneto type (some installed in 1932), central battery, and the relatively new automatic telephones. Some of the smaller exchanges and switchboards are currently overloaded. There are almost 15,000 km. of internal trunk lines for long distance calls, including connections to the Syrian and Iraqi networks at Deraa' and Mafraq respectively. Some of the trunk routes, especially between the larger cities, are inadequate in number of circuits to meet existing demands. The installation of a microwave system or a carrier system to supplement the trunk lines connecting the major centers is under technical and economic consideration.

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[1] "Telecommunications" include telephones, telegraphs, and high frequency or other radio facilities involved in telephone or telegraph services.

Telegraphic services are provided through 12 offices in Jordan and by high frequency radio facilities for both telephones and telegraphs connecting Amman with London, Cairo, Beirut, Riyadh and Kuwait. These services have been operated by the Cable and Wireless Company and the Ministry of Communications. Teleprinter service is provided internally and key-morse with several foreign centers.

Postal services are provided through 50 post offices and 345 postal agencies or sub-offices. Only ten of the post office buildings are owned by the government. The postal services apparently operated at a small profit in 1962/3.

In *organization* the accounting, operating and maintenance functions for postal services and telephones and telegraphs are combined. The accounting procedure is such that it is impossible to ascertain the profitability of either post offices or telephones and telegraphs or any section of them with any precision.

As there is no cost accounting, the profitability of different operations is unknown, and the level of charges cannot be compared with known costs. The Ministry does not maintain an inventory of its assets for depreciation purposes. Revenues are assigned to the government accounts, and expenses and capital purchases made from the Ministry of Communications budget.

A limited accounting investigation by the Jordan Development Board in May-June, 1963, indicated that Telephones and Telegraphs are operating at a considerable loss when depreciation is taken into account. Estimated depreciated value of assets in telecommunications as of March 31, 1963 was JD 5,480,000 and of liabilities was JD 752,000.

For telecommunications and postal services there are about 1,500 employees.

Objectives

1) The provision of telecommunication service meeting the following criteria :

   a) Efficient service to subscribers, through re-organization of the administrative, accounting, and technical operations of the Ministry.

   b) At least a six per cent return on investment.

c) Installation of 14,000 new telephones by 1970, or an increase of about 50 per cent during the period.

2) The provision of postal services meeting the following criteria:

a) Efficient service and expansion to meet the needs of the growing population.

b) Introduction of postal savings.

Telecommunications

Proposal 11-1. *Re-organization Study*

The telecommunications sector of the Ministry of Communications proposes a reorganization of their administrative, accounting and technical operations. To achieve this reorganization, the Prime Minister should appoint a special committee composed of one senior civil servant from each of the following organizations: Ministry of Communications, Development Board, Budget Department, and the Civil Service Commission. This Committee should be empowered to arrange for the conversion of the Ministry's accounts and budget functions to business-type systems and to make organizational and analytical studies of all administrative and technical operations of the posts and telecommunications activities to determine the extent and nature of reorganization and of changed administrative procedures, and revised operating practices required to improve their general efficiency.

The Committee should be empowered to request, as it deems necessary, the services of professionally competent foreign technical advisors in the fields of posts and telecommunications accounting and fiscal management, of telecommunications engineering, and of administration and management of posts and telecommunications business operations. The Committee should complete its responsibilities including the submission of its recommendations and securing their approval by the Minister of Communications so that the final report will be ready by January 1, 1965. The final report should include not only the target dates for the completion of specific proposed changes and reorganization, but also should record the changes and reorganization already completed and in operation.

In the later years of the Seven Year Plan, after the results of the proposed internal reorganization of the Ministry are evident, the Minister of Communications should examine the efficacy of creating a separate quasi-public telecommunications corporation.

Reorganization alone cannot place the telecommunications activities on a business like basis. Rate increases, both for use and installation, must be made in 1965. Coordination with the Ministry of Finance is required on this matter.

Personnel Requirements

The Ministry requirements for technical personnel for the Seven Year Program include the following professional and sub-professional staff:

TABLE 1 Ministry of Communications Additional Staff

Additional Staff	Present 1963	1964	1965	1966	1967	1968	1969	1970
Electrical Engineers	13	2	—	3	3	3	4	5
Mechanical Engineers	—	2	—	—	—	—	—	—
Civil Architectural Engineers	—	2	—	—	1	—	—	1
Accountants	—	4	—	—	1	—	—	—
Auditors	—	2	—	—	1	—	—	—
Draftsmen	—	10	—	2	—	—	—	—
Assistant Engineers	—	10	—	2	—	—	—	—

Investment Requirements

Although the final report of the Special Committee will no doubt have an impact on the pattern of investment required for the steady growth of telecommunication services, Table 2 should provide useful guidelines.

TABLE 2 Telecommunication Expansion 1964-1970 (JD 000's)

	Number of New Units 64-5 to 70-1	1964	1965	1966	1967	1968	1969	1970	Total
Automatic exchanges	7	40	40	40	40	40	40	40	280
Cable networks	13	70	68	66	163	174	164	165	870
Rural post office telephones	105	15	15	15	15	15	15	15	105
Telephones	14,000	14	14	14	14	14	14	14	98
P. B. X's	466	4	44	4	4	4	4	4	28
Direct dialing centers	5	—	—	—	75	75	75	75	300
Carriers	—	17	17	17	17	17	17	18	120
Buildings & Land	13	40	40	40	40	40	50	50	300
Installation Cost	—	50	50	50	60	61	61	59	391
Micro - Wave	—	—	—	1,215	1,215	—	—	—	2,430
Payments for Equipment previously purchased	—	192	192	194	12	—	—	—	590
Total	—	442	440	1,655	1,655	440	440	440	5,512
Foreign exchange	—	380	378	1,471	1,461	367	364	366	4,747
Local currency	—	62	62	184	194	73	76	74	765

Postal Services

For investment in postal services, it is proposed to expand the postal agencies from 345 in 1963 to 450 in 1970. Because all of the additional accommodation is expected to be rented, capital expenditures will consist of only modest furnishings and equipment.

As with telecommunications, the postal service requires the attention of cost accountants to identify the main areas of cost and potential areas of cost reduction. Considerable savings in cost of operation are possible.

The Hashemite Broadcasting Service

The Hashemite Broadcasting Service disseminates information, entertainment, educational and other features for simultaneous reception not only by the people of Jordan but also by all neighbouring countries. Because of Jordan's geographical position, the Hashemite Broadcasting Service reaches Lebanon, Syria, Iraq, Kuwait, Saudi Arabia and Egypt, and short wave transmission is received in North Africa and Europe.

The Hashemite Broadcasting Service has recently been expanded and improved so that there are now six medium-wave transmitters and three short-wave transmitters.

The total number of the employees of the Hashemite Broadcasting Service has now reached 290.

The composition of this organization is as follows :

One Director with four assistants who are responsible for the following operations of the broadcasting service.

1) News
2) Engineering
3) Programs
4) Administration

In addition there is a commercial section to take care of commercials.

There are now 190,000 receiving sets in Jordan serving most of the local population.

Proposal 11-2. *Extension of radio and general cultural facilities*

1) Installation of a 100 KW transmitter at the Amman Station has been completed.

2) Installation of two transmitting units of 100 KW each have been recently completed at the Ramallah transmission station. Both units will work simultaneously at a total capacity of 200 KW.

3) Installation of a medium wave transmitter and a special studio have also been completed and linked with a reserve electrical power unit.

4) A tender has been advertized for the purchase of a 600 KW electrical power unit to serve as a reserve plant to provide the necessary power for the Amman transmitters in case of a power failure resulting from the failure of the generators or the high pressure network belonging to the Amman Electrical Company.

5) The Ministry of Public Works has been given the task of constructing a music library at a cost of JD 6000 designed to meet the requirements of the next 15 years.

6) A tender has been advertized for the purchase of air conditioning units for the Amman transmitting station.

Requirements

1) Broadcasting networks, for external broadcasting in mobile units at an estimated cost of JD 15,000.

2) Construction of a large studio including a stage in the capital. Since broadcasting is an influential means for contacting people, and since the present facilities are situated at a long distance to facilitate such contact, the construction of a studio and a stage for recording all encounters, panels and official ceremonies is essential. The cost of construction is estimated at JD 10,000.

3) Setting up teleprinter networks among the Royal Palaces, the Prime Ministry, the Ministry of Information and the Broadcasting Stations in Amman and Ramallah. This will facilitate keeping responsible officials in immediate contact with the news and in transmitting the news bulletins directly to Jerusalem, which will save setting up a wireless network. The teleprinter network is estimated to cost JD 4,500.

4) Construction of a new building to be used for studios in Jerusalem to increase the broadcasting of its general program in Arabic and foreign languages. Total construction costs are estimated at JD. 35,000.

5) Construction of a high frequency broadcasting network to cover the densely populated regions of the Kingdom particularly the following cities : Amman, Jerusalem, Nablus, Irbid, Hebron, Ma'an, Karak and Aqaba. This proposal is justified for two reasons :-

First, a political one in case the broadcasting station is exposed to air attacks in case of war and, Second, a technical one, arising from the fact that the scope medium wave is exposed to increasing interference. This is aggravated by the widespread use of this scope by many countries, which leads several of them to increase their transmission capacity to more than 1000 KW, thus incurring heavy expenses in purchasing the equipment and in transmission costs.

The total cost of this network is estimated at JD 48,000 i.e. JD 6,000 for each station. The execution of this project could be carried out in several stages.

6) Upgrading light and sound technical competence to be able to relay official and public celebrations from the Roman Amphitheatre. This project is estimated to cost JD 5,000.

The total cost of spare parts required for the maintenance of all transmitting and monitoring equipment and studios is estimated at about JD 100,000 annually.

Methods of Achieving Objectives

Requirements

Two engineers specialists in electricity and electronics. Eight graduates of a technical training school.

Supporting Organizations

The Press Department publishes a monthly magazine in Arabic under the title "The Message of Jordan". Its contents include the following :

The programs of the Broadcasting Service in Arabic.

Articles on Jordan.

Main monthly activities in the country.

The Investment requirements of the above projects are distributed as follows :

	JD	Fiscal Year
1) Construction of Jerusalem Studios	35,000	1965/66
2) Mobile Broadcasting network, Telegraph network and construction of the Amman studios	29,500	1966/67
3) The first stage of the high frequency broadcasting network and the light and sound system for the Roman Amphitheatre	17,000	1967/68
4) The third stage of the high frequency network	18,000	1969/70

Source of financing: Jordan Government Budget.

SUMMARY

Proposal 11-1

A Committee should be appointed to study the administrative, accounting and technical aspects of the telecommunications section at the Ministry of Communications. It should consist of one senior civil servant from each of the following departments: Ministry of Communications, Budget Department, Jordan Development Board and the Civil Service Commission and it should complete its study by January 1, 1966.

Proposal 11-2

Extension of the cultural and radio services of the Broadcasting Station.

CHAPTER 12 *ELECTRICITY*

Adequate supplies of low cost electricity are essential to economic development and to improvement in living conditions. The per capita consumption of electricity is often taken as an indicator of the level of economic development. Consumption of electricity per capita in Jordan in 1962/63 was approximately 56.5 kwh; the table below compares this level of consumption with those of a number of other countries.

Country	Consumption/Capita
West Germany	1,766 kwh (1961/62)
Cyprus	418 kwh
Lebanon	346 kwh
Iraq	150 kwh (public supply only)
Egypt	116 kwh
Syria	88 kwh
Jordan	56.5 kwh

Previous Reports on the Electricity Supply Industry

Over the past few years the Jordan Government has utilized the services of a number of consulting firms to undertake studies of Jordan's electricity supply. In drafting the Seven Year Plan careful consideration was given to the following reports :-

1) "Yarmouk-Jordan Valley Project", Vol. VI, Michael Baker and Harza, Consulting Engineers, U.S.A. (1955).

2) "Development of Electric Power in Jordan", Kennedy and Donkin, Consulting Engineers, London, U.K. (1958).

3) "Report on the Electrification of the Hashemite Kingdom of Jordan" — Vorm W. Lahmeyer, Consulting Engineers, Frankfurt, Germany (1963).

4) "Report on the Development and Organization of the Electricity Supply Industry" — Joint Committee of Jordan Development Board and Ministry of National Economy (October 1963).

Present Position of Electricity Supply Industry

The Lahmeyer Report indicated that in 1962 only 25 per cent of the population were enjoing the benefits of electricity :

1) Population living in electrified areas and using electricity.	25 per cent
2) Population living in electrified areas but not using electricity.	25 per cent
3) Population living in non-electrified areas of between 1000 - 6000 inhabitants.	25 per cent
4) Population living in non-electrified areas of under 1000 inhabitants.	25 per cent

The proportion of population outside the electrified areas varies among districts; in the Amman-Zerqa district it was as low as 11.3 per cent; in the Jerusalem district 53.9 per cent of those in the district were outside the electrified area, whereas in Ma'an, Kerak and Aqaba districts at least 70 per cent of the population were in non-electrified areas.

The evolution of the electricity supply industry in Jordan has been similar to that in most countries; first, the densely populated areas are provided with electricity; second, mergers and interconnections are arranged; third, large national or regional developments occur to gain the economies of large scale generation, transmission, and distribution. Jordan now is in the second stage in its evolutionary development as indicated by the recent mergers of Amman and Zerqa; Jerusalem, Bethlehem, Ramallah and Jericho; Ajloun, Irbid, Huan and Jerash. The Lahmeyer Report proposes that Jordan move into the third stage during 1964 by the integration of the electrical supply industry.

The electricity supply industry in Jordan is relatively young. The largest undertaking in the country, which operated in Amman area, dates from 1947. There are at present 28 separate undertakings, of which four are company-owned and 24 are owned by local authorities. The present undertakings have been developed without an effective coordinated national policy backed by legislation. The industry employs approximately 1,000 persons.

The 28 commercial suppliers operate 130 generating sets (all diesel-electric) ranging in size from 20 kw to 3,000 kw. That there is a heavy predominance of very small generating units is evidenced by the fact that 96 per cent of the total number of existing generating stations produce only 22 per cent of the total energy consumed whereas 4 per cent of the sets produce 78 per cent of the electricity.

The Lahmeyer Report shows conclusively that the larger the generating plant the lower the per unit cost of generation. On the average the following data are applicable to Jordanian undertakings :

Installed Capacity	Generation cost in fils per kwh
120 kw	30
150 kw	28
400 kw	18
1,000 kw	13.5
1,800 kw	12
2,000 kw	10

Many of the undertakings have high peak loads for short durations, which results in low load factors and high costs per unit (see Table 1 of the Appendix). The utilization of the plants varies widely; some are overloaded and operate without stand-by, and others are oversized and underutilized. The peak load at Ma'an, for example, is 120 kw with an installed capacity of 130 kw, and in Salt the peak load is 360 kw at 400 kw installed capacity, whereas in Salfit the peak load is 40 kw as against installed capacity of 184 kw and at Irbid the peak load of 800 kw is much below installed capacity of 1800 kw.

The number of personnel employed in relation to the capacity is quite different for the individual plants. In general, it is higher for the small plants and decreases with increases in capacity. For the smaller plants of 50 to 100 kw it is 20 to 30 men per MW as opposed to an average of eight men per MW for the bigger plants.

Present Electric Power Requirements

According to the Lahmeyer Report total energy generated in 1961/62 was 118.3 million kwh and total consumption was 103.8 million kwh of which 62 million kwh were sold by public supply systems and 42 million kwh were used by various organizations such as the Cement Factory and the Army that produced their own power.

The total units sold by public supply undertakings during the year 1962/63 was 68.5 million kwh or an increase of 11 per cent over the previous year. Of the 68.5 million kwh sold, the four companies accounted for 59 million kwh and the 24 municipally owned undertakings accounted for 9.8 million kwh. The total consumption per capita during the year 1962/63 was 56.5 kwh.

In 1961/62 consumption in Jordan was distributed as follows :

Large industry	48.5 per cent
Households	18.5 per cent
Public consumers (Government, Hospitals, etc.)	13.5 per cent
Other industry	10.5 per cent
Trades, handicrafts, etc.	5.4 per cent
Street lighting	3.6 per cent
	100.0 per cent

Tariffs are of the "stepped block" type with prices varying from 60 fils to 10 fils per kwh depending upon the undertaking and the amount consumed. The average price per unit sold in 1962/63 for the whole country was 20.6 fils although in the more heavily populated areas of Amman and Jerusalem the price per unit sold was 18.8 fils and 22.2 fils respectively. The present high prices and the substantial charges made for new connections are serious deterrents to electrical development.

Future Electric Power Requirements

The Lahmeyer Report of 1963 estimated that the purchase of power in 1971/72 in the northern region (all West Bank plus all East Bank from Madaba north) would be 304 million kwh and consumption in the southern region (including phosphate and potash plants) would be 81 million kwh or a total of 385 million kwh for all Jordan. In addition, about 33 million kwh will be produced and consumed by the Cement Company and other organizations. If these consumption figures are reached, per capita consumption in Jordan would be 180 kwh in 1971/72 as compared with 56.5 kwh in 1962/63.

The present and future purchases of electricity in the northern region are shown in the following table :

TABLE 1 Present and Future Purchases of Electricity from Public Supply Undertakings in the Northern Region (Lahmeyer Report, 1963) (in million kilowatt hours)

	1961-62	1966-67	1971-72
Amman			
Normal consumers	29.5	—	112.0
Refinery Zerqa	12.5	—	27.0
Cement factory	—	—	20.0
Army	—	—	13.5
New settlements	—	—	0.3
Total	42.0	84.0	172.8
Peak load in MV	12.0	21.0	39.0
Jerusalem			
Normal consumers	9.8	—	38.3
Drinking water	—	—	30.0
Irrigation	—	—	18.0
Army	—	—	3.7
New settlements	—	—	4.0
Total	9.8	36.0	99.0
Peak load in MV	4.0	8.5	14.5
Nablus			
Normal consumers	4.5	—	13.3
Irrigation	—	—	2.9
Army	—	—	0.3
New settlements	—	—	3.9
Total	4.5	9.5	20.4
Peak load in MV	1.8	3.3	6.9
Irbed			
Normal load	3.2	—	13.7
Army	—	—	1.2
New settlements	—	—	1.8
Total	3.2	7.2	16.7
Peak load in MV	1.3	2.9	6.0
	1961-62	1966-67	1971-72
Total purchased in northern region	59.5	136.9	303.9
Peak load in MV	19.1	35.8	71.4
Losses in dist. network (8 per cent)	1.5	2.8	5.7
Losses in transmission (4 per cent)	—	1.4	2.9
Generated peak power in MV	20.6	40.0	80.0
Generated energy in million kwh	66.5	152.0	340.0

Present and future consumption of power in the southern region is shown in Table 2.

TABLE 2 Present and Future Consumption of Electric Power in the southern region (Lahmeyer Report, 1963) (in million kilowatt hours)

	1961-62	1966-67	1971-72
Normal load	1.4	2.9	3.8
Potash factory	—	36.0	72.0
Phosphate (El Hasa)	—	1.4	2.8
Army	0.7	1.3	2.7
Total	2.1	41.6	81.3

Lahmeyer based the above estimates of future requirements on the following important assumptions :

1) The Jordan Cement Factory will purchase rather than produce its future additional energy requirements of 20 million kwh.

2) All permanent army camps will be connected to the public utilities and stop their own generation with the exception of emergency units.

3) Irrigation and water supply schemes with a consumption of 19.9 million kwh will be supplied by public utilities.

4) By 1971/72, one-third of the settlements with more than 1,000 inhabitants will be connected and have a consumption of 10 million kwh.

The Yarmouk hydro-electric power generating facilities will be under construction during this period. It is planned, on the basis of the consultants' preliminary report on the Yarmouk project, that power facilities with a capacity of up to 30,000 kw will be constructed by 1968. The guaranteed capacity (80 per cent occurrence probability) will be only 10,000 kw. In consideration thereof, it is necessary to depend heavily on thermal power to meet Jordan's needs during the period between 1964 and 1971.

Recommendations of Baker-Harza, Kennedy and Donkin, V. W. Lahmeyer Reports and the Joint Committee

The report on the Yarmouk-Jordan Valley project by Baker and Harza embodied a complete master plan for utilization of the head waters of the Yarmouk River for irrigation and generation of electric power. It indicated that the power likely to become available will be a significant factor in the overall electrical picture.

The Kennedy and Donkin Report recommended that generation be concentrated in fewer stations on a regional basis and that undertakings within the region be integrated and that a 33 KV "grid" be erected to connect the proposed four northern regions of Amman, Jerusalem, Nablus and Irbed.

V.W. Lahmeyer were asked to study the whole question of electric development in Jordan. In addition to a study of all existing undertakings and estimation of future demand, as summarized in Tables 1 and 2 above, Lahmeyer considered three alternative lines of development for future electrification.

a) Separate generation in each settlement.

b) Generation in four regional power plants and distribution network within regions, and

c) Generation of basic load in a central power plant and transmission through a national grid.

Briefly, the Lahmeyer Report recommended :

1) A central thermal steam station at Zerqa, close to the Jordan Petroleum Refinery, with a capacity that may reach 60,000 kw by 1971/72.

2) *A 110 KV primary transmission system in the form of a "grid"* linking Amman, Jerusalem, Nablus, Irbed, and the Yarmouk Project when implemented.

3) The use of certain existing diesel stations, extended as necessary, for peak load operation.

4) The closing down of the remaining small and uneconomic generating stations as soon as 33 KV secondary transmission lines can be provided to give bulk supplies.

5) A modest program of rural development by means of 33 KV lines such that about one-third of presently unelectrified villages would be supplied by 1971/72.

6) The provision of a separate small 33 KV network linking Safi and El-Hasa with spur lines of Tafila and Kerak, to be supplied from the projected power station of the Arab Potash Company at Safi.

The Bott-Oscroft report analysed the factors affecting the organization of the public electricity companies and put forward the following three alternative forms of organization in ascending order of desirability.

Alternative 'A' ***Central Generation and main Transmission under a Public Authority accountable to Government***

This alternative applies to the northern area of the Kingdom only and results in the division of the industry into two parts namely (a) Generation and Transmission, and (b) Distribution and sale to consumers. Part (a) — Generation and Transmission — would be the responsibility of a Public Authority with a Board consisting of not more than five members appointed by Government. The principal studies of the Board would include the following :

i) To take over control and responsibility for the operation of such generating stations as the Authority decides to "select", such stations would be known as "selected" stations.

ii) To construct, own and operate a high voltage "grid" system interconnecting all "selected" and new generating stations and main bulk-supply points.

iii) To generate, deliver and sell energy to distribution undertakings and to large industrial consumers at bulk undertakings and to large industrial consumers at bulk supply points, and at rates to be fixed by the Authority.

iv) To provide an abundant supply of electric energy at the cheapest possible price while maximizing the use of the country's own energy resources.

The Board would be required to appoint a small and professionally qualified staff of managers, accountants and engineers with an adequate supporting office, technical and manual staff for the operation of power stations and the transmission system.

The southern part of the Kingdom would not lend itself to the same kind of treatment as the north due to the low and scattered nature of the population. Apart from the possibility of a small local 33 KV "grid" system in the Safi, Tafila, Karak, El-Hasa region, the existing arrangements for providing electricity supply would remain undisturbed.

Alternative 'B' *Complete Integration of the Industry under one Company*

This involves a merger of all existing public electricity establishments and the creation of one company with the following principal duties :

i) Take over and operate all existing generating stations and build and operate new stations.

ii) Construct and operate a national high voltage "grid" system interconnecting "selected generating stations and main bulk-supply points in the northern region of the Kingdom".

iii) Take over and operate all existing electricity establishments with their distribution systems and other assets.

iv) Extend the utility to the greatest number of settlements as is economically possible.

v) Provide an abundant and reliable supply of energy at the cheapest possible price.

It is also proposed that the Government of Jordan become a shareholder with an equity of 51% in the new Company. This form of integration will involve a smaller amount of technical and financial change than the other alternatives and will provide all the benefits of a large scale operation in the form of lower unit costs, more dependable supply, and less investment.

The company would have a board of directors not exceeding eleven, five of whom would be appointed by the shareholders and the remaining six by the Government. The Chairman would be elected by the board from among its members.

Alternative 'C' *Complete Integration of the Industry under a Public Authority Accountable to Government*

This represents public ownership involving the creation of a public Board consisting of not more than seven members and appointed by the Government. The principal duties of such a Board would be the same as outlined in Alternative 'B'.

The Board would be autonomous and non-governmental but would be accountable to Government. It would operate on a strictly commercial basis and would be non-profit making. It would give due provision for interest, depreciation, amortization and reserves. This alternative presumes, however, that for the first seven years at least, most of the funds needed for development would come from the government or from abroad and would be possibly supplemented by the issue of bonds or of guaranteed unredeemable 6% stocks.

Compensation to existing undertakings would be paid through the issue of the above stocks. No compensation would be paid to undertakings owned by local governments unless it is established that funds have been taken from the "general rate fund for electricity development". The new Board would assume responsibility for any loans or other claims on the undertakings at the date of take-over.

Expansion of the Electricity Division of the Ministry of National Economy

The Electricity Division must be strengthened in order to administer the Electricity Law, and guide, control and coordinate electric power development throughout the Kingdom. The Division should have three sections dealing with :

i) Generation and transmission
ii) Distribution and metering
iii) Administration and legal and financial affairs

The division must also pay particular attention to pricing policy with respect to generating costs and retail tariff charges.

A small, professionally qualified staff with the necessary office services is required for these functions and Table 3 gives a suggested composition and details the required training programme.

Proposal 12-1. *Engineering Aspects*

The basic recommendations of the Lahmeyer Report, namely the establishment of central generation and a national "grid" in the north would provide the most economic means of generating power and of transmitting it in bulk to the main consuming centers. The "grid" would also provide the essential means of transmitting energy from the Yarmouk Hydro-electric project to the consuming centers.

Proposal 12-2

As a corollary to 12-1 above and as a means of providing the cheapest possible energy for public use, the electricity industry should be fully integrated under a single public Authority (Alternative 'C' failing which Alternative 'B', failing which Alternative 'A').

Proposal 12-3

The Electricity Division of the Ministry of National Economy must be adequately strengthened to carry out its duties under the proposed Electricity Laws. The Division must become the "Electricity Directorate" and must undertake the tasks detailed hereunder.

1) To secure the production, generation and transmission of electric power with the least possible cost and to fix electricity prices at a fair and just level which meets the requirements of local consumption and of other industrial uses.

2) To develop the existing sources of power in the Kingdom and to work for the coordination and integration of stations, and to organize the transmission of power between consumption and generation centers.

3) To coordinate all private and government efforts in the generation, transmission and distribution of electricity.

4) To initiate and implement standard measurements and specifications.

5) To unify and coordinate electricity laws and coordinate administrative and financial regulations concerning the distribution of electricity.

6) To supervise electricity projects and establishments, and control electricity companies so as to secure the implementation of the Ministry's policy concerning the generation, transmission and distribution of power.

7) To participate in the preparation of studies relating to a long-term policy for developing sources of electric power throughout the Kingdom in a way that guarantees an organization of this vital concern that would keep pace with the requirements of industrial and economic development and serve the rising standards of living in the Kingdom.

The Electricity Division of the Ministry of National Economy, with the assistance of the Jordan Development Board, has a leading role to play in the implementation of the Government's electricity programme. The first task was the drafting of a basic Electricity Law that takes into consideration the existing conditions and that would provide a firm foundation for future legislation. This work was completed in 1964 and now awaits Government approval. A further Law providing for the establishment of the Jordan Electricity Authority and for implementing, in particular, proposals 12-1 and 12-2 is now in preparation.

TABLE 3 Professional Personnel Requirements of the Electricity Division for the possible Training Program 1964-1970

	1964	1965	1966	1967	1968	1969	1970	Total
Division Manager	1	—	—	—	—	—	—	1
Electrical Engineers	2	—	—	1	—	—	—	3
Mechanical Engineers	—	1	—	—	—	—	—	1
Secretary Accountant	—	1	—	—	—	—	—	1
Assistant Secretary Accountant	—	—	1	—	—	—	—	1
Meters Controller	—	—	1	—	—	—	—	1
Draftsman Registration Clerk	—	1	—	—	—	—	—	1
Total	3	3	2	1	—	—	—	9
Training Program : -								
Division Manager	—	1	—	—	—	—	—	1
Electrical Engineer	—	—	1	1	1	—	—	3
Mechanical Engineers	—	—	—	1	—	—	—	1
Secretary Accountant	—	1	—	—	—	—	—	1
Meters Controller	—	1	—	—	—	—	—	1

TABLE 4 (A) Estimated Capital Requirements for Electrical Industry (JD million)

Year	Thermal Generation	Hydro-Electric Generation	Transmission High Tension	Distribution	Others	Total
1965/66	0.110	0.425	0.248	0.340	0.065	1.188
1966/67	0.514	0.660	0.290	0.380	0.136	1.980
1967/68	0.446	0.850	0.312	0.380	0.024	2.012
1968/69	0.200	0.365	0.474	0.380	0.026	1.445
1969/70	0.080		0.318	0.380	0.040	0.818
1970/71	0.120		0.183	0.380	0.022	0.705
1971/72	0.440		0.050	0.370	0.026	0.886
1972/73	1.040				0.039	1.079
1973/74	0.180					0.180
	3.130	2.300	1.875	2.610	0.378	10.293

TABLE 4 (B) Estimated Capital Requirements of Jordan Electricity Authority (Alternative 'C' of Proposal 12-2) (JD million)

Year	Thermal Generation	Hydro-Electric Generation	Transmission	Others	Total
1965/66	0.110	0.425	0.248	0.022	0.805
1966/67	0.514	0.660	0.290	0.049	1.0513
1967/68	0.446	0.850	0.312	0.008	1.0616
1968/69	0.200	0.365	0.474	0.009	1.0548
1969/70	0.080		0.318	0.013	0.411
1970/71	0.120		0.183	0.007	0.310
1971/72	0.440		0.050	0.009	0.499
1972/73	1.040			0.013	1.055
1973/74	0.180				0.180
	3.130	2.300	1.875	0.130	7.437

Note The sum of JD 2,300,000 for the Shouneh Station constitutes the estimated capital expenditure for the generating Station, (Including Civil Engineering work and Electrical and Mechanical equipments).

This law will be presented to the Government shortly. The capital requirements for the new Jordan Electricity Authority are given in Table 4 (B), and except for such sums as can be raised by public subscription and/or deferred payments to suppliers of equipments etc, the necessary finance (provisionally fixed at JD 7.6 M. by JDB) will be provided by or through Government. The estimated capital requirements for the electricity industry for the period 1965/66 to 1971/72 are also given in Table 4 (A). These requirements amount to JD 10.293 million of which the Government hopes to finance 50%.

APPENDIX TABLE 1 Diesel Power Plants in Jordan in 1961-62

Undertakipg Location & Type of Ownership	(1) Capacity of power station (kw)	(2) Peak demand (kw)	(3) Energy Generated (000 kwh)	(4) Energy Sold (000 kwh)	(5) Load* Factor %	(6) Cost of Per Kwh fils/Kwh	(7) Capital invest JD/kw
1. Amman Power Company	9,594	8,000	30,267.0	24,860.0	43	8.62	55
2. Jerusalem Electric Co.,	5,485	2,820	9,824.4	8,070.2	55	12.7	55
3. Zerka	4,780	3,500	17,796.0	15,204.0	58	7.4	55
4. Irbed Electricity Co.,	1,800	800	2,920.0	2,036.0	42	13.41	57
5. Municipality, Nablus	1,440	1,100	3,330.0	2,891.0	35	9.94	58
6. Aqaba Port Authority	1,076	470	888.0	755.3	22	—	—
7. Municipality, Hebron	927	440	1,440.0	1,143.2	37	12.04	60
8. Municipality, Tulkaram	585	370	1,550.0	1,172.0	48	10.41	62
9. Municipality, Jenin	360	180	287.0	267.0	18	11.95	62.5
10. Municipality, Salt	400	360	1,235.0	988.0	39	26.8	63
11. Jericho Electric System	345	140	350.0	275.0	28	25.9	64
12. Municipality, Karak	330	135	279.3	232.7	17	23.5	65
13. Municipality, Ramtha	264	90	195.3	157.8	25	27.4	70
14. Mafraq Electric Syst.	248	120	480.0	283.5	46	15.65	73
15. Municipality, Jarash	204	100	138.0	122.0	15	32.2	76
16. Municipality, Salfit	184	40	94.2	79.0	27	38.7	78
17. Municipality, Ajlun	140	40	128.0	87.0	36	24.8	85
18. Municipality, Madaba	131	90	162.5	145.0	20	30.1	87
19. Municipality, Ma'an	130	120	302.8	256.1	29	18.9	87
20. Municipality, Husn	120	50	151.0	136.0	34	22.7	90
21. Municipality, Tafilah	112	50	134.4	120.4	30	28.9	92.5
22. Municipality, Kufrinja	100	30	60.0	46.8	22	41.8	96
23. Municipality, Anjara	80	22	72.0	63.3	37	30.8	103
24. Municipality, En Nueiyima	65	40	144.5	123.0	41	16.2	108
25. Municipality, Shuna	64	55	69.4	62.4	10	33.0	108
26. El Tahiba Electric Co.,	62	30	49.3	41.8	18	40.0	109
27. Municipality, Rabba	40	14	38.6	20.6	31	13.2	113
Total	29,064	19,206	72,386.7	59,639.9			

Source : Lahmeyer Report except for calculation of Col. 5 for further details, see Tables 1 & 4 of Lahmeyer Report.

* Load factor refers to the ratio of Power Generated (col 3) to Peak Demand (col. 2) if the facility were operated at Peak Demand level throughout the year. Formula is as follows :

$$\frac{\text{Energy generated} \quad \text{x} \quad 100}{\text{Peak demand} \quad \text{x} \quad 8760} = \text{Load factor}$$

SUMMARY

Proposal 12-1

Central generation and the construction of a national grid.

Proposal 12-2

Complete integration of the electricity industry under a Public Authority accountable to Government (i.e. alternative "C" failing which alternative "B", failing which alternative "A").

Proposal 12-3

Expansion of the Electricity Division of the Ministry of National Economy to enable it to carry out its responsibilities.

CHAPTER 13 *EDUCATION*

The citizens of the Hashemite Kingdom of Jordan believe in the necessity of developing educational opportunities as a means of providing the country with a responsible citizenry with a view to becoming, sooner or later, capable of earning their living and pursuing a free and decent life, and with an informed leadership and trained manpower. They understand education as an instrument for individual, social, cultural and economic progress, and they view education as a production activity and an investment in human resources essential for the development of a progressive and prosperous country.

The importance of education to the people of Jordan is indicated by the progress made in the 1951-1961 decade. The growth of the number of children attending school was far more rapid than population growth. Population growth was about 35 per cent during the decade whereas total school enrolment rose from 140,000 to 297,000 or an increase of 113 per cent. The number of students in schools operated by the Ministry of Education rose from 87,000 in 1951 to 199,000 in 1961/62, an increase of 129 per cent, and the number of teachers in Ministry schools increased from 2043 to 6302, up 209 per cent. The budget of the Ministry increased from JD 308,194 in 1951/52 (2.1 per cent of the total Government budget) to JD 2,946,800 in 1961/62 (or about 8.7 per cent of the total budget).

Large gains in the numbers attending UNRWA schools were also achieved, student enrolment increasing from 18,208 in 1951/52 to 52,212 in 1961/62, an increase of 186 per cent. Private schools had a smaller enrolment increase, from 32,819 to 41,993 — up 28 per cent.

Although great progress has been made, much remains to be done. The 1961 census indicated that in that year only 56.5 per cent of the children aged 6 to 14 inclusive were in school and the percentage varied widely among areas. In the same year only 32.4 per cent of the population over 14 years of age were literate.

While it is true that there is some leakage during the elementary cycle, yet a large percentage of those who complete this cycle continue to the first preparatory class.

This percentage is likely to increase as a result of the enactment of the new Education Law 1964 which makes the period of compulsory education nine years.

This program for education is designed to achieve a meaningful but realistic set of objectives. By 1970 we will still be saying that there has been much progress, but there remains much to be done.

The program for education is presented in two parts. Part A refers to the Ministry of Education activities and Part B refers to the University of Jordan.

PART A. THE MINISTRY OF EDUCATION

Objectives

The Ministry of Education has responsibility for serving the educational needs of the country from first grade through teachers college. It also has auxiliary interest in the social, cultural, recreational, and health aspects of its constituents. The Ministry of Education has the obligation of providing educational facilities to all boys and girls at school age until they have had completed the compulsory nine years of schooling in accordance with the Education Law 1964. For these reasons its task is large and its objectives are numerous. Although all of its objectives are long run, many have greater urgency than others and therefore are programmed for inauguration in the early years of the Seven Year Plan.

1) The first objective is to move school enrolment as rapidly and efficiently as possible, given available resources, towards 100 per cent implementation of the compulsory school attendance Law. An intermediate target of 85 per cent attendance by 1970/71 is established with complete compliance expected by 1975. Table I indicates the 1970/71 targets.

2) The proposed regulations ensuing from the Education Law should be passed as soon as possible and certainly during the academic year 1964/65.

3) The third objective is to implement the certification standards mentioned in the Education Law 1964 under articles 22, 84, 86 and 87

as rapidly as possible for both current staff and new personnel, through summer courses, scholarships, fellowships and study leave.

4) A long-run program of school site purchases especially in the larger cities must be inaugurated. Coupled with this should go a pilot construction project for replacing some of the more dilapidated, rented schools with functional, inexpensively constructed ones.

TABLE I School Enrolment Targets

	1962-63	1970-71
1. Number of Children in school		
a) Ministry of Education	219,539	456,800
b) Private	43,585	54,600
c) UNRWA	55,839	69,000
d) Other Government	4,387	5,400
TOTAL	322.750	585,800
2. Number of children in secondary classes (1)	22,798	48,150
3. Number of children in school aged 6-14	265,270	488,058
4. Number of children aged 6-14 inclusive (2)	423,465	572,528
5. Row (3) as a percentage of row (4)	62.6	85.2

(1) Represents 6.7 per cent of total enrolment in 1962/63 and 8.2 per cent in 1970/71.

(2) Derived from 1961 Census of Population, plus projections.

5) To improve the quality and raise the number of qualified graduates from the teachers colleges.

6) The compensation and status of teachers in the Kingdom must be improved in order to draw the best possible recruits into this important field. Special emphasis in this respect should be given to the teaching staff of the teachers colleges.

7) The extensive administrative reorganization which is now taking place in the Ministry of Education aiming at more decentralization both in the centre and in the various districts should be completed as stated under articles 78, 79, 80 and 81 of the Education Law 1964.

8) To review the curricular structure and textbook material needed by Jordan at this stage of its development. It is expected that the process of curriculum development for all cycles (i.e. from compulsory through teachers colleges) will go on for the next two years and will be implemented in the next subsequent five years. Slight modifications on various curricula might be introduced where needed in the light of the result of research and observation of teachers and supervisors.

9) Jordan has now nine years of compulsory education which carries the student through preparatory school. This expansion of educational opportunity for all Jordan youth will inevitably bring pressure on secondary education. It also leads to the periodic graduation of big numbers of such students who are unqualified to take up work. This necessitates the diversification and expansion of secondary vocational education on account of academic education through the expansion of existing vocational schools and the establishment of new ones.

10) Furniture, equipment, and instructional materials used must be improved especially in the secondary schools and in the rural areas. Special attention should be given to laboratory equipment and to the development of libraries, in particular references and standard books in all fields of knowledge.

11) A new school rental program must be inaugurated to alleviate the over-crowded conditions in many of the urban schools and to meet the new enrolment now projected. A carefully studied plan for school building projects should be worked out and started.

12) The Ministry needs to develop an integrated school health program with trained nurses in the districts and supervised by a medical doctor in the Ministry in the first instance and eventually by a doctor in each district.

13) The 1961 census established adult illiteracy at 67 per cent. Although the long-run solution to this problem is the expanded educational program for the children, a pilot program for evening adult education in cooperation with the Ministry of Social Affairs and Labor, and in the existing facilities will be undertaken.

14) A cultural arts program in the schools including art, music, and the theatre as well as a full-scale physical education program including organized sports is needed to help meet the social, physical, and emotional needs of the students and to provide better opportunities for the use of their leisure time.

Enrolment

In the 1962/63 academic year, 65 per cent of the children aged 6-14 years were enrolled in public or private schools. This was an increase from 60 per cent in 1961/62. In order to reach the goal of 100 per cent school attendance by 1975 and the intermediate goal of 85 per cent by 1970, significant planning and careful programming must take place. These enrolment goals require more schools, more equipment, and more textbooks and other curricula materials for boys and girls in both urban and rural areas. Because the expansion of both private and UNRWA schools is considered modest, at best, the Ministry of Education will be called upon to provide the great bulk of this increase in educational opportunity.

Proposal 13-1. *Increase attendance in schools so that 85 per cent of all children 6-14 years of age are in school in 1970-71*

Table 2 shows the pattern of expansion required by the Ministry to reach the 85 per cent goal by 1970/71. The table shows in column 10 the number of new male and female teachers needed each year (assuming a ratio of 36 students per teacher) and the number of extra classrooms and auxiliary rooms needed if the enrolment expansion goals are to be met.

In Table 3 the costs of the physical expansion in enrolment required to meet the 85 per cent compulsory education target for 6-14 years old by 1970/71 are given. Please note that Table 3 gives only extra teacher costs, extra school rental costs (not school construction costs), and extra furniture and equipment costs. It does not include estimates of materials and textbook costs. If a school construction program is adopted in the later years of the plan, the costs will naturally rise accordingly. In addition, no factor is built into the salary costs of teachers to allow for raises in their basic pay. There is therefore a strong likelihood that these estimates are under-reported.

Table 4 shows the pattern of enrolment in the secondary cycle of the Ministry of Education.

In Table 5 the additional costs resulting from the increase of students in the secondary cycle during the Seven Year Plan are given.

The cost of expanding enrolment by one student, excluding overhead costs of supervision by principals and in the Ministry is about JD 12.5 in the compulsory cycle and about JD 30 in the secondary cycle which gives an overall average in both cycles about JD 15. This figure is useful in assessing the impact of alternative uses of government funds.

TABLE 2 Students of the Elementary and Preparatory Stages during the Seven Year Plan 1964-65 — 1970-71

1	2	3	4	5	6	7	8	9	10	11
	Sex	Population age 6-14	% Students 6-14 of age in Pop. 6-14	Number of Students 6-14	% of 6-14 Students in Min. of Educ. Schools	Number Min. of Education Students 6-14	Number Min. of Education Students in Elem. & Prep.	Increase in No. Min. of Education Students	Increase in Min. Education Teachers 36 to 1	Increase in No. of rooms 1 Classroom Per teacher 1 aux. room per 4 Classrooms
	Males	240,365	75%	180,274	75%	135,205	148,725	5,602	156	
1964/1965	Females	216,332	55%	118,983	67%	79,322	84,081	6,516	181	
	Total	456,697		299,257		214,527	232,806	12,118	337	421
	Males	249,267	77%	191,935	76%	143,951	158,346	9,621	267	
1965/1966	Females	227,631	57%	129,750	67%	86,932	92,147	8,066	224	
	Total	476,898		321,685		230,883	250,493	17,687	491	614
	Males	250,527	80%	200,422	76%	152,320	167,552	9,206	256	
1966/1967	Females	228,867	61%	139,609	68%	94,934	100,630	8,483	235	
	Total	479,394		340,031		247,254	268,182	17,689	491	614
	Males	259,630	82%	212,897	77%	163,930	180,323	12,771	355	
1967/1968	Females	236,480	65%	153,712	69%	106,061	112,424	11,794	328	
	Total	496,110		336,609		269,991	292,747	24,565	683	854
	Males	278,772	84%	234,168	78%	182,651	200,916	20,593	450	
1968/1969	Females	252,120	70%	176,484	71%	125,303	132,821	20,397	450	
	Total	530,892		410,652		307,954	333,737	40,990	900	1,125
	Males	289,365	87%	251,747	79%	198,880	218,768	17,852	496	
1969/1970	Females	26,952	75%	196,464	73%	143,418	152,023	19,202	533	
	Total	55,317		448,211		342,298	370,791	37,054	1,029	1,286
	Males	300,370	90%	270,324	80%	216,259	237,884	19,116	531	
1970/1971	Females	272,168	80%	217,734	75%	163,300	173,098	21,075	585	
	Total	572,538		488,058		379,559	410,982	40,191	1,116	1,395
	Grand Total					1,992,466	2,159,738	190,294	5,047	6,309

Remarks Column 3 : Years 1964 through 1967 actual population, final three years population estimates for entering classes.

Column 6 : The first percentage was found on the basis of the statistics of population and students (distributed by ages) in the years 1961-62 and 1962-63 45 to 1 teacher students ratio used for year 1968-69 because of disproportionate population bulge.

TABLE 3 Additional Costs Resulting from the increase of Students in the Compulsory Cycle during the Seven Year Plan (J.D.)

1 Academic Year	2 Salaries of Teachers	3 Rental Costs of Classrooms and Auxiliary Rooms Needed	4 Costs of Desks	5 Costs of Other School Equipments (Chairs, Tables etc.)	6 Total Costs
1964/65	105,144	18,945	21,812	6,543	152,444
1965/66	153,192	27,630	31,835	9,550	222,207
1966/67	153,192	27,630	31,122	9,337	221,281
1967/68	213,097	38,430	44,215	13,265	309,007
1968/69	280,880	50,625	58,364	17,510	407,379
1969/70	321,048	57,870	66,697	20,010	465,625
1970/71	358,192	62,775	72,342	21,702	515,011
TOTAL	1,584,745	283,905	326,387	97,917	2,292,954

Remarks : Column 2 : Annual salary of teacher is JD 312; it is assumed that all teachers in the elementary and preparatory stages will eventually be graduates of teachers training colleges.

Column 3 : Average of number for each classroom taken as 36; rental costs are assumed to be JD 36 per room, utilities costs are assumed to be JD 9; total JD 45 per room.

Column 4 and 5 : School equipment is computed as follows :

a) Each 100 students need 50 desks
b) Each 100 students need 4 class tables
c) Each 100 students need 2 cupboards
d) Each 100 students need 5 chairs
e) Each school needs one first aid cupboard
f) Each classroom needs one blackboard

TABLE 4 Students and Teachers of the Secondary Cycle of the Ministry of Education during the Seven Year Plan 1964-65 — 1970-71

Subject	Sex	64-65	65-66	66-67	67-68	68-69	69-70	70-71	Total
Students of the secondary cycle	Males	17,252	18,685	20,106	21,639	23,630	25,773	28,067	155,152
	Females	5,886	6,911	8,050	9,556	11,558	14,024	16,870	72,855
	Total	23,138	25,596	28,156	31,195	35,188	39,797	44,937	228,007
Increase in the number of students of the secondary cycle	Males	1,031	1,433	1,421	1,533	1,991	2,143	2,294	11,846
	Females	823	1,025	1,139	1,506	2,002	2,466	2,846	11,807
	Total	1,854	2,458	2,560	3,039	3,993	4,609	5,140	23,653
Increase in the number of teachers of the secondary cycle (24 to 1)	Males	43	60	59	64	83	89	95	493
	Females	34	43	47	63	83	103	119	492
	Total	77	103	106	127	166	192	214	985

Remarks : The ratio of the secondary cycle students to the sum of the elementary and preparatory cycle is regarded 11.6%-12% for the males, and 7%-10% for the females during the seven year plan.

TABLE 5 Additional Costs Resulting from the Increase in the Number of Students of the Secondary Cycle during the Seven Year Plan 1964-65 — 1970-71 (JD)

	64-65	65-66	66-67	67-68	68-69	69-70	70-71	Total
Increase in the annual salaries of teachers and other employees (¹)	45,600	61,104	62,928	75,240	98,496	114,000	126,768	584,136
Rental Costs (²)	3,200	4,300	4,450	5,300	7,000	8,050	8,950	41,250
Furniture (³)	5,562	7,374	7,680	9,117	11,979	13,827	15,420	70,959
Libraries, Laboratories, other Equipments (⁴)	1,391	1,844	1,920	2,279	2,995	3,457	3,855	17,741
Total	55,753	74,622	76,978	91,936	120,470	139,334	154,993	714,086

Remarks : (1) The annual salary of one teacher is JD 456
(2) Rental costs & utilities costs, assumed to be JD 50 per room
(3) Average cost of furniture for one student is JD 3
(4) Row (4) equals 25% of Row (3)

Certification of teachers

The first two objectives of the Ministry of Education are to increase the quantity of education available. Equally important however is quality. Quality depends on teachers, equipment, and facilities, but mainly on teachers. To promote and maintain quality education, a certification program is to be established for all professional personnel of the Ministry. The certification program will differentiate among four classes of professional educators: (a) elementary and preparatory school teachers, (b) secondary school teachers, (c) teachers colleges personnel, and (d) professional personnel in the Ministry and districts.

Generally, there will be more than one type of certification. Whether these are called temporary, provisional, and standard or class C, B, and A certificates is not as important as the planned effort towards full certification, the recognition that it will take much longer than the period which this Seven Year Plan covers, and the determination to give periodic recognition and reward to teachers who have progressed a respectable distance down the path to full certification.

The magnitude of the certification job can be seen in the following statistics. Of the 7122 teachers employed by the Ministry in the 1963/64 academic year, 4958 or nearly 70 per cent have had no college education. This does not consider the new teachers required each year as the Kingdom moves to implement its 9-year compulsory attendance law.

Proposal 13-2. *Certification of elementary and preparatory school teachers through certification centers, in-service summer courses, evening certification classes, and independent study*

For elementary and preparatory school teachers :-

Two years of post secondary education in general, specialized, and professional education will be required for certification. Four methods of certification will be used :-

1) Certification Centers : The Amman center for men should be expanded to accommodate more than 360 teachers per year (120 every four months). A certification center for women teachers (none now exists) should be established as soon as possible, initially to accommodate 180 per year with expansion programmed for 1966.

2) In-service Summer Courses : The structure and content of the

in-service summer courses at the teachers colleges must be redesigned so at least 75 per cent of the program serves the certification process.

3) Evening Classes: Certification centers will be established by the Ministry to provide evening classes accredited for certification purposes.

4) Independent study: The Ministry will inaugurate a program of approved independent study for which certification credit will be given upon satisfactory passing of examinations conducted by the certification centers.

Proposal 13-3. *Secondary teachers of academic and vocational schools.*

For secondary school teachers a B.A. or B.S. degree will be required and eventually post-graduate work in professional education. Currently less than 45 per cent of the 620 secondary school teachers hold university degrees and even fewer have had post graduate work in professional education. The following program will be adopted by the Ministry:-

1) Secondary school teachers who hold less than B.A. degrees will be encouraged to complete their degrees by correspondence, summer courses, and scholarships.

2) The resources of accessible universities such as the University of Jordan and the American University of Beirut in the professional education of teachers at the graduate level will be used.

3) Scholarships will be given for secondary school teachers holding B.A. degree to engage in post-graduate professional study.

4) Eventually, as resources permit, the Ministry of Education should implement Article No. 24 of the new Law of Education which will allow a sabbatical leave for teachers every six years, if they plan to use it in professional education.

Proposal 13-4. *Establishment of a certification program for teachers in teachers colleges.*

To implement its certification standards the Ministry plans to:-

1) Increase scholarships.

2) Provide sabbatical leave for professional development.

3) Promote post-graduate summer courses at the University of Jordan when they become available late in the decade, and at accessible universities.

Proposal 13-5. *Improvement of qualifications of professional personnel in the Ministry and the districts.*

Professional personnel in the Ministry and the districts must have qualifications, at least equal to the people whom they supervise.

The need is urgent for qualifying such personnel in the various departments in the Ministry of Education and the districts. This will be done through : -

1) Local in-service education courses held by the Ministry of Education.

2) Summer courses at A.U.B. or at the University of Jordan (late in the decade), and at accessible universities.

3) Scholarships for professional degrees and training.

Proposal 13-6. *Purchase of school sites and preparation for construction.*

For the 1964/65 academic year, financial resources are not available to embark on a school construction program. Although many of the rental schools are both below standard and highly over-crowded, the pressing demand of teacher recruitment, certification, and materials requires an additional year of using these poor facilities. Looking to the future, however, a school site purchase program (especially in the expanding cities) must be inaugurated immediately before the usable sites become too expensive or unavailable. Each year during the life of the Seven Year Plan some funds should be allocated for school site purchases. Table 6 below indicates the pattern needed : -

TABLE 6 School-Site Purchase Needs in the Urban Areas (JD 000's)

Year	64-65	65-66	66-67	67-68	68-69	69-70	70-71
Amount (JD)	—	—	450	450	450	450	500
			TOTAL JD	2,300,000			

Remarks :

1) Total number of rented rooms in 63/64 equal 4,000 rooms. Estimated number of rooms required to meet the expansion in the compulsory and secondary cycles during the Seven Year Plan equal 7,000 rooms. Total equals 11,000 rooms.

2) 50% of the total required rooms lie in urban areas.

3) Estimated purchase cost is JD 1500 for each dunum of land in big cities and JD 500 in small cities.

4) Each school needs 10 dunums of land and consists of 15-20 rooms.

In addition to the site purchases, a pilot school construction project should be carried out in 1964/65 to provide more precise data for planning the replacement of rented schools by new buildings when financing becomes available.

Proposal 13-7. *Consolidation and expansion of teachers colleges*

In order to supply the teachers needed to achieve the wider elementary and preparatory school enrolment goals of the Kingdom, the teachers colleges must expand both in quantity and quality. To achieve quality and also to conserve equipment, larger teachers colleges are needed. Therefore, the Ministry plans in the next two years to consolidate the present six teachers colleges into four and then to increase their size and expand their facilities.

A new scientific teacher training section has been established at Hussein Agricultural College for graduating science teachers.

The four teachers colleges would be located as follows : one college for men at Amman and another college for men at Howwarah, one college for women at Ramallah and another college for women at Ajloun. The capacity per college should be increased to accommodate :-

a) 500 to 600 students

b) 25 to 30 teachers

Table 7 shows the enrolment necessary in the teachers colleges to graduate the required number of teachers to man the elementary and preparatory school classrooms. In addition it gives projections as to the number of teachers required in the teachers colleges, including the science section at Hussein Agricultural College.

The projections in this table are based on the following assumptions :-

1) The teachers colleges will, in the early years, supply teachers only for expansion. Replacement needs are assumed to be covered by graduates from other colleges and universities and teachers returning to Jordan from other assignment.

2) There will be a 5 to 7 per cent student drop out at the teachers colleges between enrolment and graduation.

TABLE 7 Enrolment Projections of Teachers Colleges 1965 — 1970

	1965	1966	1967	1968	1969	1970	Total
Men's Colleges	546	640	836	970	1,056	1,090	5,138
Women's Colleges	482	581	803	1,015	1,155	1,207	5,243
Total Enrolment	1,028	1,221	1,639	1,985	2,211	2,297	10,381
Teachers College Teachers College Needs (20: 1 ratio)	51	61	82	99	111	115	519
Teachers College Teachers College Needs (24: 1 ratio)	43	51	68	83	92	94	431

TABLE 8 Physical needs of Teachers Colleges — 1964-1970

Item	1964			1965			1966			1967			1968			1969			1970		
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
1. Incr. in No. of students	82	174	256	1	205	206	94	99	193	196	222	418	134	212	346	86	140	226	34	52	86
2. Incr. in No. of teachers and other employees (1)	13.7	29.0	43	0.1	34.2	34	15.7	16.5	32	32.6	37.2	70	22.4	35.2	58	14.3	23.3	38	5.7	8.7	14
3. Incr. in rooms (2)	2.7	5.8	9	—	6.8	7	3.1	3.3	6	6.5	7.4	14	4.5	7	12	2.9	4.7	8	1.1	1.7	3
4. Incr. in furniture (3)																					
a) Desks	82	174	256	1	205	206	94	99	193	196	222	418	134	212	346	86	140	226	34	52	86
b) Chairs			35			28			25			56			47			31			12
c) Tables for classrooms			9			7			6			14			12			8			3
d) Tables for teachers			26			21			19			42			35			23			9
e) Cupboards & beds for students			256			206			193			418			346			226			8
f) Cupboards & beds for teachers			26			21			19			42			35			23			9

Notes on Assumptions

1. Ratio of teachers and employees to students : 1/10 (Basis : Present situation) and ratio of custodians to students : 1/15 (estimated)
2. Every thirty students need one room
3. (a) Every student needs one desk
   (b) One chair for each room and one chair for each teacher
   (c, d) One table for each room and one table for each teacher
   (e, f) One cupboard for each student and one cupboard for each teacher

TABLE 9 Increase in Costs of Operating Teachers Colleges 1964 — 1970
(Dormitory Costs Excluded) (JD)

Items	1964	1965	1966	1967	1968	1969	1970	Total
Increase in Salaries of Teachers, Employees and Custodians	18,877	14,926	14,048	30,730	25,462	16,682	6,146	126,871
Increase in costs of Rooms	6,300	4,900	4,200	9,800	8,400	5,600	2,100	41,300
Increase in Costs of chairs, desks, tables, etc.	10,450	8,390	7,860	17,050	14,120	9,230	3,500	70,600
Total	35,627	28,216	26,108	57,580	47,982	31,512	11,748	238,771

TABLE 10 Expenditure for site purchases and buildings construction for teachers colleges (JD 000's)

Item	1964	1965	1966	1967	1968	1969	1970	Total
Land purchase and buildings construction	—	—	200	—	261	—	—	461

Proposal 13-8. *Expansion of Hussein Agricultural College to educate science teachers.*

A special problem in teacher education is the training of science teachers. At present the facilities for men are inadequate and there are no facilities for women. To educate male science teachers, the Ministry proposes to expand Hussein Agricultural College : -

1) To initiate a department of science education with a two-year program for the preparation of preparatory school science teachers.

2) To continue to prepare agricultural teachers for the preparatory cycle and agricultural extension agents.

3) To expand the total enrolment of the college to accommodate 400 students and to expand the teaching staff to 25 teachers.

Proposal 13-9. *Training of Female Science Teachers at Ramallah Teachers College.*

To prepare women science teachers, new laboratory facilities and equipment are programmed for the Ramallah Teachers College for women. Construction should begin early in the 1965/66 fiscal year so that facilities become available in September 1965 for the 1965/66 academic year.

Proposal 13-10. *Appointment of a Special Educational Liaison Committee.*

The teachers colleges of the Ministry of Education, though two year institutions, are expected to provide a program which not only prepares elementary and preparatory school teachers, but also provides a solid foundation for graduates of the teachers colleges to transfer with full credit to various four-year institutions throughout the Arab World. To achieve this goal, the Prime Minister should appoint a special Educational Liaison Committee to work toward having credits earned in the Jordan teachers colleges transferable to other Arab universities and other universities in the region.

Proposal 13-11. *Provision of Special Professional Allowance for Teachers at Teachers Colleges.*

The Program of expansion for the teachers colleges will be only as good as the professors who form the faculties of the teachers colleges and actually provide the education for the future teachers. Recognizing this, the Ministry plans to inaugurate in the 1966/67 academic year professional salary allowances for the teachers of teachers colleges, related to their academic preparation and designed to retain top personnel in this crucial role of teacher education. The cost of such a program will be less than JD 2,000 and should be inaugurated in 1964.

Proposal 13-12. *Reorganisation of the Ministry of Education.*

All of these changes in student enrolment, teacher certification, special certification centers, and consolidated teachers colleges will put great stress on the administrative structure of the Ministry. This necessitates delegating appropriate authority to administrators to enable them to carry out their assigned responsibilities. Therefore the administrative reorganization of the Ministry which began late in 1963 should be completed as soon as possible.

Proposal 13-13. *Early Report by the Higher Commission for Curricula and Textbooks.*

There exists at the present time in the Ministry a study committee called the Higher Commission for Curricula and Textbooks. This committee is charged with the revision of present curricula, and the supervision of preparing new textbook materials to implement the new curricula. Since

Jordan provides free textbooks to students in the compulsory cycle and sells textbooks at cost price for students in the secondary cycle, the Ministry is involved in a production process with a significant time-lag. The curricular work of the committee should be given high priority so it may be completed by 1st March in every year, because only after that is completed can textbook writers be commissioned, the books written, then published and finally distributed. In the meantime obsolete materials may have to be used.

Proposal 13-14. *Program for construction of school buildings.*

The Ministry of Education has at present 4000 rented rooms. In addition it is estimated that 7000 rooms will be needed for expansion purposes during the Seven Year Plan.

Although funds for capital expansion and new equipments are scarce, some capital spending by the Ministry must be made. However, the great bulk of new school facilities will still need to be rented. The Ministry should have some control over the design and it should indicate the specifications of the facilities that it will rent and then put these out to builder-investors to bid upon, the Ministry accepting the lowest bid. Facilities should be rented with a long-term lease-purchase option.

Proposal 13-15. *Completion of Industrial Secondary School Buildings in Jerusalem and Nablus.*

The capital budget of the Ministry of Education in 1966/67 should include a sum of JD 20,000 to construct a boarding section for the Jerusalem Industrial Secondary School and a sum of JD 5,000 to complete the requirements of the industrial secondary school at Nablus.

Proposal 13-16. *Diversification of Secondary Education.*

In order to implement the new nine-year compulsory Education Law, highest priority has been given to the expansion of the elementary and preparatory schools. Natural growth in these lower schools will eventually cause great pressure on secondary schools, and leads to the graduation of large unqualified numbers, a matter that requires concentrated efforts for diversifying secondary education in such a manner that aims at the expansion of agricultural, industrial and commercial education for meeting Jordan's requirements for skilled labour.

In realization of this aim the Ministry of Education has decided as from the beginning of the school year 1965/66 to transform the teachers training college at Beit Hanina into a high school for business administration which can accommodate ninety students in three sections as follows:

1) The Secretarial and Business Administration Section
2) The Accountancy Section
3) Preparatory Commercial Teachers Training Section

The Ministry also intends to expand the existing vocational schools and to establish a number of new such schools. Table 11 below details the costs for said projects.

TABLE 11 Expenditure on Expansion and Establishment of Additional Secondary Vocational Schools (JD 000's)

Item	66-67	67-68	68-69	69-70	70-71	Total
Expansion of Jerusalem Secondary Industrial School	50	—	—	—	—	50
Expansion of Amman Secondary Industrial School	120	—	—	—	—	120
Establishment of a Secondary Industrial School at Zerka	—	300	—	—	—	300
Expansion of Agricultural Secondary Schools at Rabba, Arroub and Shobak	—	120	—	—	—	120
Establishment of a Secondary Vocational Girls School at Amman	—	—	150	—	—	150
Establishment of a Secondary Agricultural School at Wadi Yabes	—	—	—	150	—	150
Establishment of a Secondary Vocational Girls School at Jerusalem	—	—	—	—	150	150
Establishment of a Secondary Vocational Agricultural School at Al Husn	—	—	—	—	150	150
	170	420	150	150	300	1,190

Proposal 13-17. *Inauguration of a school health program*

The Ministry of Education is interested in developing the whole student, not just his intellectual ability. Though this takes top priority, student health is important because absences due to poor health prevent the school from carrying out its basic educational task. Therefore, the Ministry will inaugurate in the 1966/67 school year, an integrated school health program with trained visiting nurses in each district and supervised by a medical doctor in the Ministry. Additional nurses will be added in 1968/69 and later additional doctors.

Proposal 13-18. *Pilot educational projects in art, music and theatre.*

In addition to student health, the cultural, social and physical needs of the students must be met. In the 1965/66 academic year, the Ministry should plan pilot projects in physical education, music, art, and theatre for introduction into selected schools in 1966/67. On the basis of these projects and as facilities are available, these programs should be expanded to cover additional schools.

A field of specialization in art education for prospective art teachers in the compulsory cycle should be introduced into the curricula of two of the teachers colleges (one for boys and the other for girls).

In the long-run, however, a special institute for art and music should be established to graduate more competent art teachers. In addition, a special institute for the preparation of teachers of physical education in the compulsory cycle should be established in cooperation with the authorities supervising the activities of Hussein Sports City in order to utilize its facilities.

Proposal 13-19. *Program of Adult Education.*

The Ministry of Education is giving more and more attention to the improvement and expansion of a program to minimize the number of illiterate adults. The rate of adult literacy was approximately 33 per cent, as indicated by 1961 population census.

It is desirable to implement a proposal aiming at the establishment of evening courses in cooperation with the Ministry of Social Affairs for teaching males as from the academic year 1965/66. The proposal calls for the exploitation of the present teaching staffs by requesting them to do additional working hours for certain allowances.

SUMMARY

Proposal 13-1

Increases in enrolment in the elementary and preparatory schools so that 85 per cent of all children 6-14 years of age will be in schools in 1970. This will require more than 5,000 new teachers, more than 6,000 new rooms and large expenditures on furniture and equipment over the life of the Plan.

Proposal 13-2

Certification of elementary and preparatory school teachers through certification centers, in-services summer courses, evening certification classes, and independent study will be expanded.

Proposal 13-3

New certification standards and a program to implement the standards for secondary school teachers using scholarships, correspondence and summer courses.

Proposal 13-4

A certification program for teachers in the teachers colleges will be established.

Proposal 13-5

Certification standards for professional employees in the Ministry and the districts will be established.

Proposal 13-6

A school-site purchase program and a pilot school construction project will be inaugurated in 1966.

Proposal 13-7

The Ministry will consolidate the present six teachers colleges into four and develop a plan for their regular expansion.

Proposal 13-8

Hussein Agricultural College will expand enrolment and inaugurate a two year program for preparing men science teachers for the preparatory schools.

Proposal 13-9

Facilities for preparing women science teachers for the preparatory schools should be ready in Ramallah for the 1965/66 academic year.

Proposal 13-10

A special Education Liaison Committee should be appointed as soon as possible to work with other Arab universities and other universities in the region so that credits of the teachers' colleges are transferable elsewhere.

Proposal 13-11

A special professional salary allowance for teachers in the teachers' colleges should be inaugurated immediately.

Proposal 13-12

The administrative reorganization of the Ministry should be completed as soon as possible.

Proposal 13-13

The final report of the Higher Commission for Curricula and Textbooks should be expedited.

Proposal 13-14

A program for leasing schools built to Ministry specifications by private capital should be developed in the 1965/66 academic year.

Proposal 13-15

Building a boarding section for the Jerusalem Industrial School and completion of the Nablus Secondary Industrial School.

Proposal 13-16

Diversification of secondary education such as to expand secondary industrial, agricultural, and commercial education and at the same time improve the quality of academic secondary education.

Proposal 13-17

An integrated school health program supervised by a medical doctor in the Ministry and operated by trained visiting nurses in the districts will be inaugurated in 1966.

Proposal 13-18

A program of pilot projects in art, music, theatre, and physical education should be planned during 1965/66 for inauguration in 1966/67.

Proposal 13-19

The initiation of a program for adult education to meet the Kingdom's adult illiteracy problems will be expanded in 1965/66 in cooperation with the Ministry of Social Affairs and Labor.

PART B. THE UNIVERSITY OF JORDAN

The University of Jordan will complete its second year of existence in June 1964. Currently the University consists of an Arts Faculty with six departments enrolling about 250 students. The University is an independent organization supervised by a Board of Trustees, controlled by a Senate (University Council), and administered by a President. Each Faculty is controlled by its own Faculty Council and administered by a Dean. The University has four buildings and an additional one (an auditorium) is under construction. It is located on a 600 dunum campus west of Amman.

The University derives its financial support from an annual Government subsidy, tuition charges (currently JD 24 per year) and private gifts and grants. The exact nature and amount of Government support is not specified but during the first year of operation the Government of Jordan contributed JD 75,000. The greatest bulk of support to the University came from a JD 187,000 gift from the Jordan Cement Company. Rapid expansion of the University hinges upon more adequate and regular financial support.

Objectives

The objectives of the University of Jordan during the Seven Year Plan are :

1) To gain a steady flow of financial support.

2) To appoint a President of the University.

3) To create a master plan for the University.

4) To create a Faculty of Science and a Faculty of Commerce and Economics and eventually a Faculty of Agriculture.

5) To expand professional teaching staff and physical facilities to accommodate a student body of approximately 2,700 by 1970/71.

6) To develop a Master degree program in the Arts Faculty in the field of education in order to help prepare qualified secondary school teachers for the Kingdom's schools.

Proposal 13-20. *Acquisition of Land for the University.*

The University of Jordan is located on a campus of 600 dunums. This land, however, has not yet been registered in the University's name. The Government of Jordan should proceed immediately to have this land registered in the name of the University and should seek options to buy 600 adjacent dunums which are needed for the long run expansion of the University.

Proposal 13-21. *Long run financial commitments by the Government to support the University.*

The sources of funds to finance the day-to-day operations of the University remain unsettled at this time. Student charges at JD 24 per year are already high compared with nearby Arab Universities. The Government made a contribution of JD 75,000 during the first year of operation, and a similar sum was budgeted for the second year but no funds had been delivered to the University during the second fiscal year at least up to December 1963. In order that the University performs its important educational role in the Kingdom steady sources of funds must be assured. Obviously as more students are educated within Jordan, significant foreign exchange savings will develop.

Proposal 13-22. *Appointment of a University President.*

The University of Jordan does not yet have a President. Because the educational leadership for the development of a long-run Master Plan for the University must come from the President. This appointment should be made as soon as possible.

Proposal 13-23. *Development of a Master Plan for the University*

Subsequent to the appointment of a President of the University, immediate attention should be given to the development of a long run Master Plan for it. The educational plan should have first priority followed by an architectural plan. In order to facilitate this planning, a planning committee appointed and headed by the President with trustee and faculty representation should be established and strong consideration should be given to utilizing an external consultant. This committee should be convened immediately after the appointment of the President and should make its report by January 1, 1965.

Proposal 13-24. *Establishment of a Faculty of Commerce and Economics in 1965-66.*

The greatest single shortage of professional manpower in the Kingdom at this time is people with managerial, marketing, and financial training. Therefore the early establishment of a Faculty of Commerce and Economics has a number one priority and should be opened as soon as possible but no later that the 1965/66 academic year unless such a decision would be counter to the long-run Master Plan.

Proposal 13-25. *Establishment of a Science Faculty in 1965-66.*

Equally as important but presenting greater implementation problems is the establishment of a Faculty of Science. Because a science program depends so heavily on adequate laboratories and facilities, and because these facilities cannot be planned and constructed before the precise nature of the science program is determined, these problems must be solved before the Science Faculty can be established. Because of the importance of a Science Faculty to the University and to Jordan every effort should be made, short of sacrificing quality, to open the Science Faculty in the 1965/66 academic year.

As the University moves toward its target size of 2,700 students by 1970, additional capital expansion will have to occur, first for more academic buildings and later in the seven year period for some dormitories. Recognizing that the University is an autonomous organization, the capital spending for University expansion will be out of private sector spending rather than public sector spending. Table 5 in Chapter 2 gives aggregate private investment. Relevant parts of that table relating to the University are reproduced here.

TABLE 11 University of Jordan Investment Targets 1963-1970 (JD 000's)

	1963	1964	1965	1966	1967	1968	1969	1970
University Investment	60	120	250	250	300	350	400	400

Given below are enrolment projections for the Arts Faculty 1964/65 through 1970/71 (See Table 12). These projections are based on the following assumptions: (1) maximum size of student body should be 1,000, (2) attrition following the freshman year is 10 per cent, following the sophomore year is 7 per cent, and following the junior year is 5 per cent.

TABLE 12 Arts Faculty Enrolment

	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
Freshmen	170	220	250	275	285	285	285	285
Sophomores	80	153	198	225	247	254	254	254
Juniors	—	74	142	184	209	230	237	237
Seniors	—	—	70	135	175	198	218	225
	250	447	660	819	916	967	994	1,001

Tables 13 and 14 below, give enrolment projections for the Faculty of Commerce and Economics and for the Faculty of Science respectively. These projections are based on the same two assumptions as the Faculty of Arts plus an assumption of 25 per cent attrition in the first Freshman class enrolled in each faculty and that the two Faculties will commence operations in 1965/66.

TABLE 13 Commerce and Economics Faculty Enrolment

	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
Freshmen	200	200	225	250	285	285
Sophomores	—	150	180	202	225	254
Juniors	—	—	139	167	188	209
Seniors	—	—	—	132	159	178
	200	350	544	751	857	926

TABLE 14 Science Faculty Enrolment

	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
Freshmen	120	150	180	210	240	270
Sophomores	—	90	135	162	189	216
Juniors	—	—	84	127	151	176
Seniors	—	—	—	80	120	143
	120	240	399	579	700	805

Given the enrolment patterns of the various Faculties of the University, Table 15 shows the projected number of freshmen that will be enrolled in each faculty in each year of the Plan. Table 16 shows the projected number of graduating seniors and Table 17 shows total enrolment projections by Faculties rising from 250 in 1963/64 to 2,732 students in 1970/71.

TABLE 15 Number of Freshmen to be Accepted by the University of Jordan 1964-65 to 1970-71

Number of Freshmen Needed	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
Arts	220	250	275	285	285	285	285
Commerce	—	200	200	225	250	285	285
Science	—	120	150	180	210	240	270
	220	570	625	690	745	810	840

TABLE 16 Number of Seniors to be graduated 1965-66 to 1970-71

Number of Senior Graduates	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
Arts	70	135	175	198	218	225
Commerce	—	—	—	132	139	173
Science	—	—	—	80	120	143
	70	135	175	410	497	546

TABLE 17 The University of Jordan Enrolment Pattern by Faculties 1963-64 to 1970-71

	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
Arts	250	447	660	819	911	967	994	1,001
Commerce	—	—	200	350	544	751	857	926
Science	—	—	120	240	399	579	700	805
	250	447	980	1,409	1,854	2,297	2,551	2,732

The enrolment pattern of Table 18 gives an indication of teaching staff needs of the University over the seven year period. At present the University has 11 full-time and 5 part-time faculty or an equivalent of 13 full-time with an enrolment of 250. In rough terms this involves a 20 to 1 ratio. Although a 20 to 1 ratio is somewhat high, it is possible through careful planning and proper faculty selection for an institution to maintain quality with such a ratio. For purposes of faculty projection we will assume that the Arts Faculty and the Commerce Faculty will operate at 20 to 1 ratios and that the Science Faculty because of laboratory requirements will operate on a 15 to 1 ratio. Table 18 shows the teaching faculty needs given these ratios and the enrolment pattern of Table 17.

TABLE 18 The University of Jordan teaching staff needs, by Faculties* 1963-64 to 1970-71

Faculties	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
Arts	13	22	33	41	46	48	50	50
Commerce	—	—	10	18	27	37	43	46
Science	—	—	8	16	27	38	47	54
	13	22	51	75	100	123	140	150

* Ratio 20 to 1 for Arts and Commerce, 15 to 1 for Science.

Proposal 13-26. *Establishment of a University office of buildings and grounds.*

The physical plan needs of the University by 1970 when it will have at least three Faculties, more than 2,700 students, and 150 faculty members, will be extensive and expensive. For this reason the University should establish in 1964 an office of buildings and grounds to supervise the planning, construction and maintenance of physical facilities.

By 1970/71, the University will be of the size and strength to move on to the creation of additional faculties in line with its long run master plan.

Proposal 13-27. *Establishment of a Master degree program in Education.*

The relationship between University of Jordan and the Ministry of Education is an independent but cooperative one. As the Ministry inaugurates its plans to establish professional standards of certification, it will need the help of the University in training competent, qualified teachers. In this connection the University should establish a Master degree program in the field of education no later than the 1967/68 academic year.

SUMMARY

Proposal 13-20

Clear title to the 600 dunums campus of the University should be established immediately. Plans should be made and options acquired to expand the size of the campus up to another 600 dunums by fiscal 1965/66.

Proposal 13-21

Specific agreement should be reached immediately between the Government of Jordan and the University concerning the Government financial contribution as stated in the University Charter. Until such agreement is reached, the Government of Jordan should continue to support the University at the level established during the first year of operations.

Proposal 13-22

The President of the University of Jordan should be appointed as soon as possible.

Proposal 13-23

A planning committee appointed and headed by the President should develop a Master Educational and Architectural Plan for the University. It should present its report by January 1, 1965.

Proposal 13-24

A faculty of Commerce and Economics should be established for the 1965/66 academic year unless such a decision is found to be counter to the long run Master Plan.

Proposal 13-25

A Faculty of Science should be established in the 1965/66 academic year if proper program and facilities can be made available by that time and provided such a decision is not counter to the long run Master Plan.

Proposal 13-26

An Office of Buildings and Grounds to supervise the planning, construction and maintenance of the physical facilities of the University should be established in 1964.

Proposal 13-27

A Master degree program in education to help prepare teachers for the Kingdom's secondary schools should be established by the 1967/68 academic year.

CHAPTER 14 *HEALTH*

The health of Jordanians is affected by two important factors the dry healthful climate and the heavy preponderance of young people. Health services are provided by the Ministry of Health (preventive and curative programs), private hospitals and practitioners, and United Nations Relief and Works Agency.

Two of the best measures of the magnitude of health services in a country are : (a) the number of hospital beds per 10,000 persons, and (b) the number of medical doctors per 10,000 persons. There are other measures, such as the number of nurses, clinics and so forth, and of course there are problems of quality and distribution within the country which the above two measures do not take into account.

TABLE 1 Hospital Beds and Medical Doctors per 10,000 of Population, 1960

Countries	Hospital Beds	Medical Doctors
U. S. A.	100	13.35
Kuwait	83	11.1
Lebanon	56.5	9.3
Libya	31	1.71
Egypt	21	3.91
Jordan	17.6 (1962; 19.5)	1.72
Iraq	14.5	1.79
Syria	10	2.18
Iran	9.5	2.6
Sudan	9.3	.29
Saudi Arabia	6	.76
Ethiopia	4.3	NA
Yemen	3	.055
Pakistan	2.6	1.09

Source : U.N. Monthly Bulletin, March, 1962.

From the above table it can be seen that Jordan has a long way to go before it can attain the standards of some of the more advanced nations, but it does provide greater health services than the majority of the nearby Middle East countries, many of which are more wealthy.

In Jordan there are at present 1476 beds in 28 private and UNRWA hospitals and 1943 beds in 27 civilian public hospitals. Any one can receive treatment and drugs free in the public hospitals if he is unable to pay. Rates are low even for those able to pay; total revenue from hospital charges in 1962 was estimated at only JD 15.4 per government bed per year.

Health services have received an increasing proportion of the budget in recent years; between 1955/56 and 1962/63 the total Government budget increased by 114 per cent whereas the Ministry of Health budget increased by 155 per cent. In 1963/64, the Ministry of Health was scheduled to receive about four per cent of the Government of Jordan budget allocations.

Since the Seven Year Plan is designed to bring Jordan to economic self-sufficiency as soon as possible, most of the public funds have been allocated to water, mining, agriculture and tourism. Nevertheless the plan allocates sufficient funds to raise the standard of health services considerably.

Objectives

1) Increase the number of civilian hospital beds from 19.5 per 10,000 persons in 1962 to 25 beds per 10,000 persons in 1970.

2) Improve the standard of existing curative health services.

3) Improve the standard of preventive health services by establishing 17 district multi-purpose health centers including tuberculosis and maternity services.

4) Improving the standard of health services through more better-trained personnel. This involves expanding the existing Professional Nursing School to accommodate :

   a) a new Practical Nursing School for females,
   b) a new Health Workers School for males,
   c) an expanded Professional Nursing School for females,
   d) an expanded Midwifery School, and
   e) an expanded Sanitary Sub-Inspectors School.

5) Increasing the number of beds at the present tubercular hospital.

6) Providing quarantine facilities at Jordan entry points to prevent influx of contagious diseases.

7) Increasing personnel of the Ministry of Health.

8) Completion of malaria eradication program.

Assumptions basic to the Plan

1) The population of Jordan in 1970 is expected to be 2.2 million, of which about 300,000 (including dependents of non-civilian personnel) are expected to be treated in military hospitals.

2) UNRWA will continue to offer its free medical treatment and financial aid at present levels.

3) The number of beds in private and UNRWA hospitals will increase from 1476 in 1963 to 1890 in 1970.

Proposal 14-1. *Construction of additional government hospitals to increase number of beds by 895 by 1970*

There are at present 55 private and government hospitals with a total of 3419 beds, or 19.5 beds for every 10,000 persons. Considering that the population is expected to increase to almost 2.2 million by 1970 and that about 300,000 are expected to be treated in military hospitals, the total number of non-military hospital beds must be 4730 in order to achieve the objective of 25 beds for every 10,000 civilians. Assuming that the number of private and UNRWA hospital beds will be increased to 1890 by 1970 it follows that an additional 895 government beds will be required by the end of the Plan period.

TABLE 2 Additional Government Hospitals 1964-70

District	1963 (1) Actual	1964	1965	1966	1967	1968	1969	1970	Total 1964-70
Amman									
Balqa	20(926)	—	1(250)	—	—	—	—	—	1(250)
Ajloun	4(189)	—	—	—	1(70)	—	1(100)	—	2(170)
Karak	3(122)	—	—	—	—	1(50)	—	—	1(50)
Ma'an	3(97)	—	—	—	—	1(50)	—	—	1(50)
Jerusalem	14(1383)	1(100)	—	—	—	—	—	—	1(100)
Nablus	9(507)	1(100)	—	—	—	—	1(120)	—	2(220)
Hebron	2(195)	—	—	—	—	1(55)	—	—	1(55)
Total	55(3419)	2(200)	1(250)	—	1(70)	3(155)	2(220)	—	9(895)

(1) Public plus Private

Figures in brackets designate number of beds.

Data for 1965-70 indicate year of commencing construction; Jerusalem and Nablus hospitals are already under construction.

Expenditure required is shown in table 3.

The construction of government hospitals has been scheduled over the period 1964-70, as shown in table 2.

TABLE 3 Additional Expenditure on Hospitals 1964-70 (JD 000's)

	1964	1965	1966	1967	1968	1969	1970
Construction cost	24	70	102	265	257	415	227
Equipment cost	—	100	—	—	125	35	188
Operating cost (additional to level of 1963)	—	—	80	80	80	180	208
Total	24	170	182	345	462	630	623

Assumed cost of construction and equipment JD 2,500 per bed.

Proposal 14-2. *Expansion in number of Health Centers*

The Health centers all provide approximately the same service, but differ in size. They provide preventive and curative medical care such as raising the standard of health education, environmental sanitation, maternity and child health, vaccination and so forth. Some of them might have 3-6 beds for emergencies. They are divided as follows :

a) *Regional Health Centers*

It is suggested that 14 district health centers should be established by 1970. Such centers will undertake multi-medical services such as tuberculosis, various maternity and infancy services. Among other services rendered there may be emergency surgical operations, general clinic jobs and others. These centers must be provided with a number of beds and an emergency ambulance car for each.

b) *District health centers*

There are 22 existing centers and by 1970 they will be increased to 30. Contiguous accommodation will be provided at some of these centers for the tuberculosis control service.

c) *District sub-centers*

i) *Maternity and Child Health Centers*

There are 38 existing Maternity and Child Health Centers.

TABLE 4 Expenditure on Health Centers 1964-70 (JD 000's)

	1964	1965	1966	1967	1968	1969	1970
Construction cost	—	20	28	48	24	24	24
Equipment cost	—	—	6	6	3	3	3
Operating cost (additional to 1963 level)	—	—	13	27	54	77	90
Total	—	20	47	81	81	104	117

Proposal 14-3. *Expansion of existing Health Schools and initiation of Practical Nursing Health Workers Schools*

In order to meet some of the personnel requirements for extra hospitals and other health centers, the existing health schools such as the Professional Nursing School, Midwifery School and Sanitary Sub-Inspectors School have to be expanded and a Practical Nursing School and Health Workers School have to be established as soon as possible. For more effective use of facilities and personnel all of the schools will be located at the site of the present Professional Nursing School in Amman.

a) *Professional Nursing School*

The Professional Nursing School provides general health education and the basis of science such as chemistry, biology, and bacteriology. Its graduates are authorized to give vaccination and some kinds of medicine along, and to assist surgeons in operation rooms and supervise practical nurses.

The capacity of the existing school in Amman is a total of 60 female students or 20 per year for the three year course. The average annual operating cost per student is nearly JD 400. The school should be expanded by constructing another floor to increase its capacity to 80 students. It is expected that a total of 152 nurses will have been graduated in the period 1964/70. Salaries of students will be raised by 20 per cent but graduates will be required to serve the Ministry of Health for at least three years rather than for two as at present.

b) *Practical Nursing School*

The Practical Nursing School qualifies its graduates to serve in hospitals by cleaning, by preparing food for patients, and by taking care of patients day and night under the supervision of professional nurses.

To meet the requirements of practical nurses for the Plan, an addition to the Nursing School should be constructed to provide a one-year training program. This school should be ready by the end of 1965 with a capacity of 75 female students. The operating cost per student will be nearly JD 400 per year. It is expected that a total of 300 female nurses will have been graduated in the period 1964/70.

c) *Midwifery School*

The capacity of the existing school is 30 female students, and the annual operating cost per student is nearly JD 300. The school should be expanded by the end of 1965 so that its capacity will be increased to 60 students. By 1970 a total of 150 should have been graduated. The operating cost per student will be nearly JD 255 per year after expansion.

Salaries of students will be raised 20 per cent and graduates will be required to serve the Ministry of Health for two years rather than for one year as at present.

d) *Sanitary Sub-Inspectors Health School*

This school qualifies its graduates to inspect everything that has to do with sanitation such as water facilities for drinking purposes, swimming pools, restaurants, and groceries.

The capacity of the existing school is 12 male students. The average operating cost per man is nearly JD 355 per year. The school should be expanded by the end of 1965 to increase its capacity to 25. By 1970 a total of 136 should have been graduated. The new figure of the operating cost per student will be nearly JD 320 per year.

e) *Health Workers School*

Such a school is intended to qualify its graduates to serve in hospitals and health centers, and to provide them with general health education so that they are able to give vaccination and some kinds of medicine alone or under doctors' supervision. The course should be of two years' duration.

To meet the requirements of health workers for this Plan, a school for this purpose has to be established in 1966 starting with 30 male students per year. Its capacity will be 60 students with an average operating cost per student of JD 320 per year. A total of 90 are expected to have graduated by 1970.

TABLE 5 Additional Expenditure on Health Schools 1964-70 (JD 000's)

	1964	1965	1966	1967	1968	1969	1970
Construction cost	—	51	—	—	—	—	—
Equipment cost	—	11	—	—	—	—	—
Operating cost (additional to that of 1963)	—	—	51.59	69.02	69.02	69.02	69.02
Total	—	62	51.59	69.02	69.02	69.02	69.02

Proposal 14-4. *Expansion of Tuberculosis Control Program*

There are 40,000 Tuberculosis cases in Jordan. Almost two-thirds of the local population have been tuberculin-tested and negative reactors have been vaccinated with B.C.G.

The aim of this project is to place proper treatment of tuberculosis within the reach of all patients, the diagnosis, and treatment of all medical cases as soon as they are discovered by radiology, and the preparation of appropriate records for each case. Stricken people must be detached by all possible means. Moreover, the number of beds at the present tuberculosis hospital will be increased by 25 beds during 1967.

TABLE 6 Additional Expenditure on Tuberculosis Program 1964-70 (JD 000's)

	1964	1965	1966	1967	1968	1969	1970
Construction cost	—	—	—	37	—	—	—
Equipment cost	—	—	—	12	—	—	—
Operating cost (additional to that of 1963)	—	—	—	—	10	10	10
Total	—	—	—	49	10	10	10

Proposal 14-5. *Establishment of Quarantine Stations*

It is proposed to establish quarantine stations at all points of entry into Jordan. Stations will be constructed at the following points :

H 4 station
Ramtha station
Aqaba Port, Amman Airport and Jerusalem Airport.

These stations will be used for the isolation, testing, and emergency treatment of suspected carriers of infectious diseases. They will offer first aid in emergencies before transferring those in dangerous condition to the appropriate health facilities.

TABLE 7 Expenditure on Quarantine Project 1964-70 (JD 000's)

	1964	1965	1966	1967	1968	1969	1970
Construction cost	—	—	12	—	—	—	—
Equipment cost	—	—	7	—	—	—	—
Operating cost	—	—	2.4	2.4	2.4	2.4	2.4
Total	—	—	21.4	2.4	2.4	2.4	2.4

Proposal 14-6. *Malaria Eradication*

The program for malaria eradication has been in operation since 1957 and is expected to be completed by the end of 1967/68. Thereafter only surveillance will be necessary; this will be carried out by the Ministry of Health.

TABLE 8 Expenditure on Malaria Eradication (JD 000's)

Items	1964	1965	1966	1967
Government	60	60	60	60
Foreign	57	95	146	149
Aggregate Operating Cost	117	155	206	209

The Ministry contributed JD 45,000 per year to the project before the initiation of the plan.

Proposal 14-7. *Increasing number of the existing personnel of the Ministry of Health*

There is a shortage of personnel in the Ministry of Health. Part of this shortage will be rectified, up to 1970, by the graduates of the local health schools.

TABLE 9 Costs of Additional Personnel (JD 000's)

Personnel	1964	1965	1966	1967	1968	1969	1970
Enviromental engineers	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Sanitarians (B Sc.)	—	—	—	9.6	1.96	2.88	3.38
Inspectors	4.8	9.6	14.88	20.16	25.41	30.72	36
Health workers	—	—	12.6	24.2	37.8	50.4	63
Public health nurses	2.14	4.32	6.48	8.64	10.08	12.24	14.4
Midwives	5.28	11.58	15.84	21.12	28.32	35.04	42.24
Total	13.42	26.68	51	76.28	104.77	132.48	160.2

Proposal 14-8. *Study of the organization and management of the Ministry of Health*

The Ministry of Health is responsible for a vital service to Jordanian citizens; it has a large budget; it employs many personnel including some of the most highly trained in the Kingdom. It is proposed that an organization and management study of the Ministry be conducted starting in 1964 with the following general terms of reference :-

a) an examination of the adequacy of present administrative arrangements considering the highly diverse and technical functions for which it is responsible,

b) a review of the present methods of charging patients for services rendered, with any recommendations for improvement in order to obtain additional revenues where these can be obtained without hardship or inequity.

This study should be undertaken by a team consisting of one senior member of the Ministry and one foreign expert with short run specialized assistance as required. About 8 months will be required for the team to complete its investigations and submit its report.

Training Abroad

Trainees of high standards should be sent abroad to get specialized. Scholarships, granted by foreign organizations especially by the World Health Organization and by USAID/J will be used in this respect. The trainees will be as follows : -

TABLE 10 Ministry of Health Trainees 1964-70

	1964	1965	1966	1967	1968	1969	1970
Specialists (clinical med.)	3	4	4	4	4	3	3
Public health physicians	3	4	4	4	4	4	4
Hospital admi. (phys.)	1	2	2	2	2	2	—
X-Ray specialists	2	3	3	4	4	3	2
Lab. technicians	4	4	5	5	5	5	5
Public health nurses	2	4	4	4	4	6	6
Sanitary engineer	1	1	1	1	—	—	—
Sanitarians (B. Sc.)	5	5	5	3	1	1	—
Trainees for one year	5	6	6	4	4	4	4
Advanced nursing education and midwifery (teaching purposes)	2	4	4	4	4	4	4
Nursing administration	2	2	4	4	4	4	4
Administrative nurses for hospitals and room operation	2	4	4	4	4	4	4
Trainees for (short) courses of first aid	2	3	3	3	3	3	3

TABLE 11 Summary of extra personnel required in the Ministry of Health 1964-70

Personnel	1964	1965	1966	1967	1968	1969	1970	Total
Specialists	—	—	2	2	2	2	2	10
Physicians	—	—	21	12	13	8	7	61
Pharmacists	—	—	2	—	—	1	1	4
Pharmacist Assistants	—	—	2	4	4	1	1	12
Laboratory Technicians	—	—	2	—	—	1	1	4
Laboratory Assistants	—	—	4	8	6	2	2	22
X-Ray Technicians	—	—	2	—	—	1	—	3
Sanitary (Engineers)	2	—	—	—	—	—	—	2
Sanitarians (B. Sc.)	—	—	—	2	2	2	1	7
Sanitary Sub-Inspectors	20	20	22	22	22	22	22	150
Health Workers	—	—	46	46	46	44	44	226
Public Health Nurses	8	8	15	8	8	8	8	63
Professional Nurses	8	8	28	20	22	30	27	143
Practical Nurses	—	—	54	32	35	47	39	207
Midwives	24	25	27	27	25	26	28	182
Administrators	—	—	13	20	14	9	10	66
X-Ray Assistants	—	—	2	8	6	1	1	18
Others	—	—	61	44	48	57	49	259
Total	62	61	303	255	253	262	243	1439

TABLE 12 Graduates* expected from local health schools 1964-70

	1964	1965	1966	1967	1968	1969	1970	Total
Professional Nurses	20	20	20	20	20	26	26	152
Practical Nurses	—	—	—	75	75	75	75	300
Health Workers	—	—	—	—	30	30	30	90
Sanitary Sub-inspectors	12	12	12	25	25	25	25	136
Midwives	15	15	15	15	30	30	30	150
Total	47	47	47	135	180	186	186	828

* Excluding graduates from military health schools.

Recurring Expenditure for Ministry of Health additional to 1963 (JD 000's)

Recurring	1964	1965	1966	1967	1968	1969	1970
14-1	—	—	80	80	80	180	208
14-2	—	—	13	27	54	77	90
14-3	—	—	52	69	69	69	69
14-4	—	—	—	—	10	10	10
14-5	—	—	2	2	2	2	2
14-6**	15	15	15	15	—	—	—
14-7	13	27	51	76	105	132	160
14-8	10	—	—	—	—	—	—
Total	38	42	213	269	320	470	539

** Health Ministry allocations only.

Capital Investment (JD 000's

	1964	1965	1966	1967	1968	1969	1970
14-1	24	170	102	265	382	450	415
14-2	—	20	34	54	27	27	27
14-3	—	62	—	—	—	—	—
14-4	—	—	—	49	—	—	—
14-5	—	—	19	—	—	—	—
14-6	—	—	—	—	—	—	—
14-7	—	—	—	—	—	—	—
14-8	—	—	—	—	—	—	—
Other	70*	—	—	—	—	—	—
Total Cap.	94	252**	155	368	409	477	442

* USAID, allocated for health projects.

** The sum of (JD 60,000) for the projects included in the Plan : (JD 40,000 for hospitals), (JD 20,000) for Health Centres.

Financial Requirements of the Ministry of Health (JD 000's)

	1963	1964	1965	1966	1967	1968	1969	1970
Recurring	1,200*	1,238	1,242	1,413	1,469	1,520	1,670	1,739
Capital	132	294	252	155	368	409	477	442

* Revised from Budget 1964-4.

SUMMARY

Proposal 14-1

Construction of additional Government hospitals to increase number of beds by 895 by 1970.

Proposal 14-2

Expansion in number and programs of health centers.

Proposal 14-3

Expansion of health schools, including the Professional Nursing School, Midwifery School, Sanitary Sub-inspectors School, and initiation of a Practical Nursing School and a Health Workers School.

Proposal 14-4

Expansion of Tuberculosis control program.

Proposal 14-5

Establishment of Quarantine Stations.

Proposal 14-6

Malaria Eradication.

Proposal 14-7

Increasing personnel of the Ministry of Health.

Proposal 14-8

Study of the organization and management of the Ministry of Health.

CHAPTER 15 *HOUSING AND GOVERNMENT BUILDINGS*

Housing

Housing in Jordan has been provided exclusively by the private sector with no assistance from the Government. In general, the result has been that there are not enough houses to meet acceptable social standards, and a disproportionate number of the new houses has been of the luxury-type. The "Social Survey of Amman, 1960" indicated that one-half of the families in the city were living in one room per family. The situation in other urban centers is unknown, but is probably similar to that of Amman. It is apparent from the Census of 1961 that about 37,000 young people will become of marriageable age each year, adding to the need for housing.

Present lending facilities are inadequate to meet present demands for housing and no suitable organization exists to carry out a program of lending for house construction.

While a huge program of housing construction cannot be justified economically, given the over-all economic goal of economic independence for Jordan, an expanded program of construction of "middle-income" houses can be justified both socially and economically. Such houses would cost about JD 1,500 for both land and a house (of 100 square meters) with running water and electricity. No subsidy should be necessary for the construction of such dwellings.

Objectives

Construction of a large number of adequate but modest new single and multiple dwelling units in order to provide improved accommodation for a larger proportion of Jordanians.

Proposal 15-1. *Creation of a Housing Corporation*

The purpose of a Housing Corporation is to assist in the organization and financing of construction of dwellings for middle-income citizens. (i.e. classified government employees).

The Corporation should be a statutory autonomous body with its own chairman and directors representing various interests concerned with housing, with powers for a management board to make housing loans, promote and support housing estates, and provide housing development finance. It would not itself build any houses. The Corporation would act as Government advisor in all housing matters.

In general the Corporation would make loans as follows : for a house (and land) valued at JD 1,500 the corporation would provide a loan of JD 1,250 and the borrower would be required to provide JD 250. The borrower would make payments in the range of JD 12-15 per month to cover interest and principal and would pay taxes and insurance. With a monthly payment of JD 15 the borrower would have repaid his loan in less than 11 years, and with payments of JD 12 per month he would have repaid it in 16 years.

As repayments (including interest up to 7.5 per cent) are received, the Corporation would reloan the proceeds to finance further house construction. Initially most housing loans would be made to Government employees with incomes of JD 45 per month or more because of the additional security of such loans.

A study of the proposed Corporation was made in 1963 by two foreign experts and by the Jordan Development Board, with appropriate cash-flow tables based upon financing by Government, private sector and foreign loans.

This Corporation should be established in 1966 and be responsible initially for the provision of housing funds to the various housing co-operatives associated with the Co-operative Central Union. As experience is gained it should seek funds from the public and foreign sources. It is proposed that its activities be increased substantially in 1968 and in succeeding years with the infusion of Government funds in the following amounts 1968 — JD 300,000; 1969 — JD 500,000; 1970 — JD 700,000.

The Corporation, in its earlier years, should develop plans for houses, making these available at cost to prospective builders.

Co-operative Housing has been outlined in detail in Proposal 15-1. Already 48 houses have been constructed by co-operatives, and this Proposal calls for the construction of an additional 123 houses per year by co-operatives throughout the period 1964/70.

Continued private housing construction

The Housing Corporation and the housing co-operatives will facilitate financing of housing construction only, but they will not themselves construct houses.

The number of houses financed by the Corporation and co-operatives will be a small but significant part of total investment in housing.

TABLE I Anticipated Expenditure on Housing (1964-1970) (JD 000's)

	1964	1965	1966	1967	1968	1969	1970
Private sector Financing (1)	3,785	3,935	4,095	4,255	4,425	4,605	4,785
Corporation and co-operatives (2)	166	200	250	250	300	500	700
Total	3,951	4,135	4,345	4,505	4,725	5,105	5,585

(1) See Chapter 2, Table 5, Row 9.
(2) See Chapter 2, Table 4, Row 28.

Government Buildings

The Government now owns a number of buildings in Amman and throughout the Kingdom, but by far the greatest proportion of the buildings it occupies are rented. The 1963/64 budget indicated that about JD 125,000 would be spent on rentals for administrative purposes (almost entirely within Amman) and about JD 270,000 would be spent on other rentals, of which schools (JD 110,000), Foreign Affairs (JD 70,000) and Health (JD 44,000) were most important.

The case for and against renting as opposed to Government ownership is fairly clear. In favour of Government ownership is the desirability of drawing ministries and departments close together physically in order to achieve a considerable saving of time in consultations, and probably better co-ordination.

The case against Government construction and ownership is that such a program would take large sums of capital, urgently needed for more productive economic projects. Furthermore, the present annual expenditure on rented facilities is probably considerably less than would be the annual costs of depreciation and interest on buildings constructed and owned by the Government. This might not be true if the Government buildings were of the same standard as those presently rented, but there is a tendency on the part of governments everywhere to "build for the future" and thus construct buildings considerably bigger and better than those now rented.

In the Plan, the construction of buildings for a number of sectors is presented within each sectoral program. Consequently, the construction program for Education, Health, Social Affairs, Agriculture, Tourism, and Electricity are not included in this Chapter, except for possible buildings for administration of those sectors.

Objectives of Government Building Program

1) To provide satisfactory accommodation for Government ministries and departments at the lowest cost possible.

2) To create a long run plan for Government buildings and to construct a modest nucleus of a Government compound.

Proposal 15-2. *Renting of buildings by Government*

Renting of buildings must be continued for many years because capital is in too short supply for a major program of construction, and, generally, it is at least as cheap, or cheaper, to rent than to build and own administrative buildings. Instead of each ministry and department making its own rental arrangements independently, they should be cleared through the Ministry of Public Works. This applies to buildings for administration, not to schools, hospitals, and other non-administrative buildings.

Proposal 15-3. *Long run building program*

The Ministry of Public Works and the Jordan Development Board should produce a long run plan for Government buildings which is appropriate to the town plan for Amman. This should be completed in 1966.

Expenditures below indicate only a minimum program in the years 1964 to 1967 and include the construction of a Parliament House. Allocations must be made to the amount of JD 50,000 in the year 1966/67 for completing a housing project that would cost JD 100,000 and which would be implemented where houses for rent are scarce. In 1968, a sample program for a nucleus of contiguous government buildings will be started. The expenditures shown below indicate the cost of buildings for the administrative area of the government.

TABLE 2 Capital Expenditure on Government Buildings (JD 000's)

1964	1965	1966	1967	1968	1969	1970
38	160	190	150	200	300	430

SUMMARY

Proposal 15-1

A Housing Corporation should be created in 1966 to assist in the financing of middle income housing.

Proposal 15-2

The Government must continue to rent most of the buildings required for administration. Rentals of such buildings should be cleared through the Ministry of Public Works.

Proposal 15-3

A long-run building program should be developed in 1966 by the Ministry of Public Works and the Jordan Development Board and a modest start made in 1968 toward a nucleus of contiguous Government buildings.

CHAPTER 16 SOCIAL WELFARE, LABOR AND CO-OPERATIVES

The Ministry of Social Affairs and Labor is responsible for a wide range of social and welfare activities; it is divided into the following three departments :

Social Welfare,
Labor,
Co-operative Development

SOCIAL WELFARE

While there are about 140 philanthropic organizations registered in Jordan, of which many are doing excellent work, and while extended family loyalties are an important welfare measure, nevertheless there are many individuals and families who require assistance either in training and rehabilitation activities or because they are unable to work or to support themselves. Unfortunately, the economic situation is such that funds available for welfare activities are limited, but in some fields welfare activities can be justified on economic grounds as well as for social and humanitarian reasons. The Social Welfare Department has programs in regard to nurseries, clubs, reform institutions and old peoples' homes as well as direct aid and the provision of foodstuffs.

In preparing the Program for Social Welfare the following factors were taken into consideration :

1) Population will continue to increase at the rate of three per cent per year.

2) Internal migration will continue and expand :

   a) from rural to urban areas

   b) from one district to another

3) Industrialization will increase, and an increasing proportion of citizens will move from a subsistence to a cash economy.

4) As a result of the above three factors, there will be an increasing number of children and youth who require care outside of their homes, and the pressures of urbanized living will impose additional problems of social adjustment particularly on those in the younger age groups.

5) An increased number of aged persons will require some form of assistance from outside their families.

6) While voluntary organizations will continue to provide an important share of social services, in the future the Government is certain to carry an increasing share of responsibility, especially in areas where private effort does not play a major part, e.g. public assistance, and delinquent youth.

In general, the Program of Social Welfare follows trends which are accepted in social work in many countries :

Emphasis on assisting children in their own homes rather than through institutions.

Where children have to be cared far away from home, the system of the "substitute family" (foster care) will be used whenever possible.

Increased emphasis on utilizing the leisure time of youth for constructive purposes.

Emphasis on rehabilitation for those physically and socially handicapped with the objective of assisting families to become self-supporting.

Emphasis on training of social welfare personnel through in-service training and academic training to provide the needed personnel for an expanding program and to raise the standards of present and future workers both for voluntary and governmental services.

In all cases, the Department of Social Welfare must work closely with local leaders and enlist local support.

Objectives

1) To provide basic economic and social assistance to special groups of the community who are unable to support themselves :

a) children
b) physically handicapped
c) aged persons
d) needy persons and families

2) To provide supporting services aimed at strengthening the family and its ability to sustain itself.

Proposal 16-1. *Program of foster parenthood*

This will be a new program for Jordan, but one that is widely used in many others countries. It involves placing children who have no families, or whose families are unable to provide them with the basic necessities of life, in more happily-endowed families but without any form of legal adoption. The foster-families will be carefully selected and regular visits paid to ensure satisfactory treatment of the children. Foster-parents will be paid at the rate of JD 5 to JD 7 per month for providing food and lodging etc. which is considerably lower than the cost if the Department were to establish children's homes to care for them.

Proposal 16-2. *Children's homes*

There are now two such government homes accommodating 200 boarders. It is proposed to start three additional schools for orphans of specific age groups during the Seven Year Program. About 250 children can be accommodated in these schools. The operating cost per year is estimated at JD 115 per child (excluding capital costs) compared with JD 100 per child (including supervisory costs) for the foster parenthood program.

Proposal 16-3. *Nurseries for children under five years of age*

There is now one government nursery accepting 65 children for the day only. It accommodates children whose mothers are working or who are unable to care for them. It is proposed to start five new nurseries accommodating 1000 children during the Seven Year Program. These services will continue to be provided free.

Proposal 16-4. *Remand homes for boys*

There are now three remand homes whose purpose is to provide correctional training for first offenders who are of early age. Boys are sent to these homes for only brief periods; there are social workers in each school to try to understand their problems and assist in correcting them. It is proposed to establish one additional home accommodating 50 boys.

Proposal 16-5. ***Boys reform schools***

There is now one boys reform school with a capacity of 100 boys. In order to reduce the necessity of sending delinquent boys to jails where they will be in contact with more hardened cases, it is proposed to establish two additional reform schools, each with a capacity of 100 boys. Vocational training will be provided, as in the existing school.

Proposal 16-6. ***Boys clubs***

There is now one boys club operated by the Social Welfare Department and serving about 100 boys. The purpose of such clubs is to provide modest social and recreational facilities, arrange for housing for boys without homes, provide guidance which will give adolescents more positive activities, and reduce the need for reform institutions. It is proposed to establish four additional clubs with about 200 members each. One of them a boarding club to care for and extend services for boys who spend their suspension periods at reward and reform houses.

Proposal 16-7. ***Girls clubs***

There are now two girls' clubs in Amman and Nablus serving about 100 girls in each club. It is proposed to establish three additional clubs of a similar size and type.

Proposal 16-8. ***School for deaf and dumb children***

There are now no such government schools although there is one private school of this type. It is proposed to establish one school to accommodate 50 children and teach them trades.

Proposal 16-9. ***Blind Girls Home***

There is now one such home for blind boys. Another one accommodating 50 girls is badly needed. The purpose of these homes is to train the blind in light manual work suitable to their capabilities.

Proposal 16-10. ***A Home for the mentally retarded***

There is no such institution in Jordan and the need calls for the establishment of one institution with a capacity of 30 children. The purpose of this institution would be the provision of the best possible academic and vocational training for mentally retarded boys in accordance with their capabilities.

Proposal 16-11. *A Home for deviated women*

The problem of deviated women is considered among the social problems that deserve care and attention. It is therefore suggested that a home should be established for training such women on trades that assure them a decent living. This home would house 50 women.

Proposal 16-12. *A School for the deformed*

As there is no such school in the country it is deemed necessary in order to provide the best possible services for the deformed and teach them skills suitable for each particular case. The capacity of the school will be 50 people.

Proposal 16-13. *Homes for the aged*

There is now one such government home with a capacity of 50 persons in addition to four non-governmental homes. It is suggested that two other homes with a capacity of 100 persons be established.

Proposal 16-14. *Training project for social work*

There is presently a training project financed by UNICEF and jointly operated by the Social Welfare Department and UNICEF. The project comprises 60 social workers taking up a course of two years including in-service training. The Social Welfare Department shall have to assume financial responsibility for this project as from 1965. In that year it is proposed to increase the number of trainees to 120.

Proposal 16-15. *Youth homes and camps*

It is proposed to have a youth camp built in 1966 with accommodations for 30 persons to be used as an international camp or for local camping as a labor camp. The project will have beneficial effects on tourism.

Proposal 16-16. *Rehabilitation program*

The rehabilitation program which provides limited production facilities such as tools and looms will be expanded. It is suggested that assistance under this program should be expanded to provide 400 families in 1970 with tools valued at JD 8000. In 1963 such a program provided 10 families who received 2000 dinars of tools.

Proposal 16-17. *Town social centers*

There is presently one such center at Fuhais which provides facilities for holding meetings and similar social activities. Another such center will be established and run by a full-time social worker.

Proposal 16-18. *Citizens advice bureaux*

The purpose is to provide advice for newcomers to the main urban centers. No such bureaux now exist and it is suggested that one bureau in each of Amman and Jerusalem should be established.

Proposal 16-19. *Direct financial aid for needy persons*

The sums allocated for this purpose will be increased from JD 24,000 distributed to 1500 families in 1963, to JD 60,000 to be distributed on 3000 families in 1970.

Training Abroad

25 employees of the Social Welfare Department should be sent for higher training abroad. Three trainees must be sent annually over the coming three years and 4 employees during each of the following four years.

TABLE 1 Program of Social Welfare, and Expenditure Required (Expenditures are additional to those of 1963)

	Proposal	1964	1965	1966	1967	1968	1969	1970	Total
16-1.	PROGRAM OF FOSTER PARENTHOOD								
	No. of children per year	20	40	65	90	115	140	160	
	Cash disbursed (JD's)	1,680	3,360	5,460	7,560	9,660	11,760	13,440	52,920
	Operating cost (JD's)	540	540	1,080	1,620	1,620	2,160	2,700	10,260
	Total cost (JD's)	2,220	3,900	6,540	9,180	11,280	13,920	16,140	63,180
16-2.	CHILDREN'S HOMES								
		—	(1)	(2)	—	—	(3)	—	—
	No. of extra children	—	50	100	—	—	100	—	—
	Capital cost (JD's)	—	1,500	7,000	—	—	7,000	—	15,500
	Operating cost (JD's)	—	6,000	17,200	19,700	19,700	29,900	32,400	124,900
	Total cost (JD's)	—	7,500	24,200	19,700	19,700	36,900	32,400	140,400
(1)	Age 3-7.								
(2)	Age 7-18, males.								
(3)	Age 7-18, females.								
16-3.	NURSERIES								
	No. of extra nurseries and of children (in brackets)	—	1,(200)	1,(200)	1,(200)	1,(200)	1,(200)	1,(200)	1,(200)
	Capital cost (JD's)	—	1,500	—	1,500	1,500	1,500	1,500	7,500
	Operating cost (JD's)	—	3,400	4,400	7,800	12,200	16,600	21,000	65,400
	Total cost (JD's)	—	4,900	4,400	9,300	13,700	18,100	22,500	72,900
16-4.	REMAND HOMES FOR BOYS								
	No. of extra homes & boys (in brackets)	—	—	—	—	1,(50)	—	—	—
	Capital cost (JD's)	—	—	—	—	2,500	—	—	2,500
	Operating cost (JD's)	—	—	—	—	6,000	7,000	7,000	20,000
	Total cost (JD's)	—	—	—	—	8,500	7,000	7,000	22,500
16-5.	BOYS REFORM SCHOOL								
	No. of extra school & boys (in brackets)	—	—	1,(100)	—	—	—	1,(100)	—
	Capital cost (JD's)	—	—	7,000	—	—	—	7,000	14,000
	Operating cost (JD's)	—	—	18,000	20,000	20,000	20,000	38,000	116,000
	Total cost (JD's)	—	—	25,000	20,000	20,000	20,000	45,000	130,000
16-6.	BOYS CLUBS								
	No. of extra clubs & boys (in brackets)	—	1,(200)	—	1,(200)	1,(200)	—	—	—
	Capital cost (JD's)	2,500	600	—	600	600	—	—	4,300
	Operating cost (JD's)	4,800	9,150	9,550	12,550	15,950	16,350	16,350	84,700
	Total cost (JD's)	7,300	9,750	9,550	13,150	16,550	16,350	16,350	89,000

TABLE 1 (Continued)

Proposal	1964	1965	1966	1967	1968	1969	1970	Total
16-7. GIRLS CLUBS								
No. of clubs and of girls (in brackets)	—	1,(100)	—	1,(100)	—	1,(100)	—	—
Capital cost (JD's)	—	500	—	500	—	500	—	1,500
Operating cost (JD's)	—	1,500	1,700	3,200	3,400	4,900	5,100	19,800
Total cost (JD's)	—	2,000	1,700	3,700	3,400	5,400	5,100	21,300
16-8. SCHOOL FOR DEAF & DUMB CHILDREN								
No. of school and children	—	—	—	1,(50)	—	—	—	—
Capital cost (JD's)	—	—	—	2,000	—	—	—	2,000
Operating cost (JD's)	—	—	5,400	6,300	6,300	6,300	6,300	30,600
Total cost (JD's)	—	—	7,400	6,300	6,300	6,300	6,300	32,600
16-9. BLIND GIRLS HOME CENTERS								
Capital cost (JD's)	2,500	—	—	—	—	—	—	2,500
Operating cost (JD's)	8,000	9,200	9,200	9,200	9,200	9,200	9,200	63,200
Total cost (JD's)	10,500	9,200	9,200	9,200	9,200	9,200	9,200	65,700
16-10. HOME FOR THE MENTALLY BACKWARD	—	—	1,(30)	—	—	—	—	—
Capital cost (JD's)	—	—	2,000	—	—	—	—	2,000
Operating cost (JD's)	—	—	4,000	4,800	4,800	4,800	4,800	23,000
Total cost (JD's)	—	—	6,000	4,800	4,800	4,800	4,800	25,200
16-11. HOME FOR DEVIATED WOMEN								
No. of homes and of deviated women	—	1,(50)	—	—	—	—	—	—
Capital cost (JD's)	—	2,500	—	—	—	—	—	2,500
Operating cost (JD's)	—	6,200	7,200	7,200	7,200	7,200	7,200	42,200
Total cost (JD's)	—	8,700	7,200	7,200	7,200	7,200	7,200	44,700
16-12. SCHOOL FOR THE DEFORMED	—	—	1,(30)	—	—	—	—	—
Capital cost (JD's)	—	—	2,000	—	—	—	—	2,000
Operating cost (JD's)	—	—	5,000	5,700	5,700	5,700	5,700	27,800
Total cost (JD's)	—	—	7,000	5,700	5,700	5,700	5,700	29,800
16-13. HOMES FOR THE AGED								
No. of homes and aged people	1,(50)	—	—	1,(50)	—	—	—	—
Capital cost (JD's)	1,500	—	—	1,500	—	—	—	3,000
Operating cost (JD's)	6,000	6,750	6,750	12,750	13,500	13,500	13,500	72,750
Total cost (JD's)	7,500	6,750	6,750	14,250	13,500	13,500	13,500	75,750

TABLE 1 (Continued)

Proposal	1964	1965	1966	1967	1968	1969	1970	Total
16-14. TRAINING CENTER FOR SOCIAL WORK								
No. of Trainees	—	60	120	120	120	120	120	—
Capital cost (JD's)	—	8,000	—	—	—	—	—	8,000
Operating cost (JD's)	—	4,750	8,000	8,000	8,000	8,000	8,000	44,750
Total cost (JD's)	—	12,750	8,000	8,000	8,000	8,000	8,000	52,750
16-15. YOUTH HOMES AND CAMPS								
Capital cost (JD's)	—	—	13,000	—	—	—	—	13,000
Operating cost (JD's)	—	—	—	2,000	2,000	2,000	2,000	8,000
Total cost (JD's)	—	—	13,000	2,000	2,000	2,000	2,000	21,000
16-16. REHABILITATION PROGRAM (JD's)	2,000	3,000	4,000	5,000	6,000	7,000	8,000	35,000
16-17. TOWN SOCIAL CENTERS								
Capital cost (JD's)	—	—	—	—	1,000	—	—	1,000
Operating cost (JD's)	—	—	—	—	2,500	3,100	3,100	8,700
Total	—	—	—	—	3,500	3,100	3,100	9,700
16-18. CITIZENS ADVICE BUREAUX								
Capital cost (JD's)	—	—	—	—	—	—	—	—
Operating cost (JD's)	—	—	—	1,000	1,000	1,000	2,000	5,000
Total (JD's)	—	—	—	1,000	1,000	1,000	2,000	5,000
16-19. DIRECT FINANCIAL AID (JD's)	2,500	6,000	9,000	12,300	26,000	31,000	36,500	123,300
Research Section for the three Depart. (JD's)	—	2,500	2,500	2,500	2,500	2,500	2,500	15,000
Administration and Travels for the three Departments (JD's)	4,960	9,120	14,240	1,880	22,560	25,760	28,960	124,480
Cars (JD's)	2,000	—	1,000	—	—	—	1,000	4,000

TABLE 2 Total Expenditure on Social Welfare 1964-1970 (JD 000's)

Cost	1963*	1964	1965	1966	1967	1968	1969	1970	Total 1964-70
Capital cost	5	78**	15	34	4	6	9	10	156
Operating cost	235	265	306	368	403	441	471	509	2,763
Total	240	343	321	402	407	447	480	519	2,919

* Budget 1963-64.

** This amount includes a sum of JD 69,000 allocated from foreign sources to the Ministry of Social Welfare, but no amounts were included in the budgets of 1964-65 and 1965-66 for the Seven Year Plan Projects.

TABLE 3 Extra professional and sub-professional personnel required by Department of Social Welfare 1964-70

Personnel	1964	1965	1966	1967	1968	1969	1970	Total
Psychological Specialist	—	1	1	—	—	—	—	2
Nursing Specialist	—	1	—	—	—	—	—	1
Social Workers	9	12	11	9	5	3	7	56
Vocational Teachers	10	21	26	12	16	18	20	123
Nurses	2	2	7	3	1	1	1	17
Clerks	—	2	3	2	3	—	4	14
Other Employees	9	9	16	8	6	13	7	68
Total	30	48	64	34	31	35	39	281

Administrative changes

A new Training Section will have to be established to operate the training project when full responsibility for it is assumed by the Department in 1965.

A small new Research Section will be required to conduct surveys and studies related to social welfare. This section is proposed to be established in 1965.

Legislation

1. *Foster Parenthood Law*

This law was issued in the Official Gazette on 15th August 1963. The Law applies to children less than 15 years old, and it gives the Minister of Social Affairs and Labor the authority to pay from five to ten dinars per month to the family which takes care of a foster-child.

2. *Public Assistance and Rehabilitation Law*

This law was issued in the Official Gazette on 24th May, 1963, and gives the Minister of Social Affairs and Labor the authority to pay not more than JD 7 and JD 17 per month to individuals and families, respectively, according to their financial and social need.

3. *Voluntary Agencies and Social Societies Law*

The Council of Ministers has approved a new law instead of the old one. It requires voluntary agencies to re-register within three months. The new law should improve the relationship and the supervision of the Ministry with these agencies.

4. *Juvenile Protection Law*

This law is still under study by the Ministry of Social Affairs and Labor. After final preparation it will be submitted to the Council of Ministers. This law will improve the general conditions of children in jails and ask for special courts for them.

LABOR

The Labor Department of the Ministry of Social Affairs is responsible for supervision and implementation of the Labor Law (No. 21) of 1960, which outlines the duties and rights of both employees and employers. The Law applies to regulated establishments (five or more employees) excluding the following :

a) government and municipal employees
b) those who work in their family enterprises
c) employees in agricultural and irrigation enterprises
d) domestic servants

There are two labor unions in Jordan operating under the Labor Law. The Department of Labor is divided into the following divisions :

1. *Labor Inspection Division*

The duty of this Division is to check whether the regluations of the Law are implemented. Such regulations include the eight hour working day, standards of occupational health and safety, and rest days.

The Department has 16 labor inspectors who check regularly the hours and conditions of work of all regulated establishments.

2. *Conciliation and Industrial Relations Division*

This Division is responsible for settling industrial disputes between trade unions and management.

3. *Research and International Relations Division*

The duty of this division is to ascertain the most adequate means of improving workers' conditions and to keep in constant touch with the labor law and regulation of other countries.

4. *Placement and Employment Division* (to be created)

The duty of this division is to guide laborers to jobs corresponding to their qualifications and provide them with information about work methods in other countries.

5. *Educational Division* (to be created)

The duty of this division is to explain for the laborers their rights and responsibilities under the Labor Law.

6. *Training Division* (to be created)

This division is responsible for improving the skill of laborers locally or abroad, if it is necessary.

Objectives of Program for Labor :

1) To give advice and guidance to employers and workers in regard to individual contracts of employment, the contract of apprenticeship, and the protection of wages.

2) To exercise the state's functions in the regulation of labor-management relations including the encouragement of collective agreements, and the provision of a service of "compulsory" conciliation and arbitration of industrial disputes.

3) To enforce by a system of labor inspection the legal provision governing employment in "regulated" establishments employing five or more workers.

4) To exercise certain limited functions in regard to "workmen's compensation" for industrial injuries and disease.

5) To operate employment services, including a selection placement service in the larger towns, and to collect employment information.

Extra Personnel (in addition to those of 1963)

Personnel	1964	1965	1966	1967	1968	1969	1970	Total
1. Labor inspectors	5	5	2	5	—	—	—	17
2. Mechanical engineer	—	1	—	—	—	—	—	1
3. Conciliation officers	1	—	1	—	—	—	—	2
4. Employment officers	2	2	4	—	—	—	—	8
5. Administration officers	2	1	1	—	—	—	—	4
6. Wage regulations officers	—	1	3	—	—	—	—	4
Total	10	10	11	5	—	—	—	36

Foreign Training required will be an average of two persons per year through-out the seven years.

Proposal 16-20. *New divisions and responsibilities in the Labor Department*

An Employment Service Division will be established in 1964 to open offices in Amman and Jerusalem primarily for professional and sub-professional workers. As staff and experience are gained, additional offices will be established in later years to assist qualified workers in finding employment. In addition new educational and training divisions will be established.

Proposal 16-21. *Legislative changes*

Draft amendments to the Labor Law are under preparation. They are designed to extend to the smaller undertakings the eight-hour, weekly rest (with pay), and certain restrictions on the employment of women and children. This will necessitate more inspectors. (The Council of Ministers will be given power, if Parliament approves, gradually to abolish the distinction between regulated and non-regulated establishments). An extensive scheme of Regulations and Ministerial Orders is necessary in regard to occupational health and safety and in regard to overtime.

Proposal 16-22. *Establishment of a Technical Training Center*

Due to the need of promoting training for trades that are not included in the curriculum of industrial schools and training institutes such as upholstery, shoe-making, sewing, car driving and weaving, it is proposed that an institute for teaching such trades be established in a suburb of Amman in 1971/72.

TABLE 4 Extra Expenditures of the Department of Labor (additional to those of 1963) (in JD's)

	1964	1965	1966	1967	1968	1969	1970	Total
Operating cost including rent	4,420	8,960	13,796	15,996	16,716	16,236	16,452	92,576
Equipment cost	—	150	—	300	—	—	12,000	12,450
Total	4,420	9,110	13,796	16,296	16,716	16,236	28,452	105,026

CO-OPERATIVES

The Department of Co-operative Development of the Ministry of Social Affairs has played a major role in the establishment and development of a large number of independent co-operatives in many fields. Most of the co-operatives are in agriculture, primarily in the provision of seasonal credit, with new co-operatives being formed recently for agricultural supplies and marketing. The agricultural co-operatives are dealt with in detail in the Program of Agriculture (chapter 5).

The total number of co-operative members in Jordan as on March 31, 1964 was 30,969. Assuming that each member has six dependents, it follows that 185,814 persons or about 10 per cent of the total population are already involved in the co-operative movement. This ratio is considered to be one of the highest in the Middle East.

TABLE 5 Non-agricultural Co-operative Societies as of March 31, 1964

	Amman & Balqa	Jeru-salem	Nablus	Ajloun	Hebron	Kerak	Ma'an	Total
School saving	30	60	85	31	28	7	6	247
Artisan	5	3	1	—	—	1	—	10
Handicrafts	—	2	2	—	—	—	—	4
Saving societies	8	11	1	2	1	2	—	25
Supply	2	3	5	1	2	—	—	13
Housing	6	7	3	—	1	—	—	17
Transportation	—	8	1	1	—	—	—	10
Higher education and mutual benefit	4	1	1	—	1	—	—	7
Health security	—	1	—	—	—	—	—	1
Electric lighting	—	—	2	—	—	—	—	2
Total	55	96	101	35	33	10	6	336

Non Agricultural co-operatives

There are now 336 societies distributed as follows :

School savings societies (247) introduce children in schools to the principles of saving and of co-operation.

Artisan societies (10) in printing, tailoring, shoe-making, construction, quarrying, mother-of-pearl work and similar work.

Handicraft societies (4) in needlework and weaving.

Saving societies (25) in pooling of savings.

Supply societies (13) for purchase of consumer goods.

Housing societies (17) for building houses for members.

Transportation societies (10) to offer transport at reasonable prices.

Higher education and mutual benefit societies (7).

Health security (1) offers medecine and medical care at low prices. The society intends to establish a hospital and pharmacy.

Electric lighting (2) provides electricity to houses of 290 members.

Objectives

1) Artisan societies — expansion of existing societies and formation of two new societies per year.

2) Housing societies — 21 societies to build about 860 houses for members.

3) Other societies — expansion as funds permit.

TABLE 6 Funds Required for Artisan Societies — Two New Societies per year (JD 000's)

	1964	1965	1966	1967	1968	1969	1970
1. Expansion of existing societies	30	20	23	26	30	33.5	38
2. Investment in new societies	6	6	7	9	10	14.5	8
3. Total investment (row 1 + 2)	36	26	30	35	40	48	46
4. Members contributions	4.2	3.2	3.7	4.4	5	6.2	5.4
5. Required from other sources	31.8	22.8	26.3	30.6	35	41.8	40.6

It is proposed that most of funds required from other sources (row 5 above) will be obtained through the Government.

Proposal 16-23. *Expansion of Housing Co-operatives*

Housing societies have already built 48 houses at an average cost of about JD 1,100 for land and buildings.

Housing societies currently have total assets of JD 234,000. In the Seven Year Program a revolving capital program will be developed to permit the formation of new societies for building about 120 houses per year. Most of the members will be government employees, at least in the early years of the program, in order to provide financial security for the program. The average cost of a house and land is estimated at JD 1,500.

TABLE 7 Funds Required for Housing Co-operatives — Three New Societies per year

	1964	1965	1966	1967	1968	1969	1970
1. New houses constructed	123	123	123	123	123	123	123
2. Total investment (JD 000's)	184.5	184.5	184.5	184.5	184.5	184.5	184.5
3. Member contributions & payments (JD 000's)	18.5	37	55	74	92	111	129
4. Required from other sources (JD 000's)	166	147.5	129.5	110.5	92.5	73.3	55.5

SUMMARY

Proposal 16-1

Foster parenthood program to care for up to 160 children.

Proposal 16-2

Three new children's homes to accommodate 250 children.

Proposal 16-3

Five new nurseries to accommodate 1000 children.

Proposal 16-4

A boys remand home to accommodate 50 boys.

Proposal 16-5

Two boys reform schools to accommodate a total of 200 boys.

Proposal 16-6

Four boys clubs with a total membership of 800, one of which will be a boarding club.

Proposal 16-7

Three girl's clubs with a total membership of 300.

Proposal 16-8

One school to accommodate 50 deaf and dumb children.

Proposal 16-9

One blind girls home to accommodate 50 girls.

Proposal 16-10

A school for the mentally retarded to accommodate 30 persons.

Proposal 16-11

A home for deviated women to accommodate 50 women.

Proposal 16-12

A school for the deformed to accommodate 30 persons.

Proposal 16-13

A home for the aged and the incapacitated to accommodate 100 aged persons.

Proposal 16-14

A social training project comprising 60 social workers in 1964 and workers in each of the following years.

Proposal 16-15

Youth homes and camps capable of accommodating 30 persons.

Proposal 16-16

Rehabilitation programs for purchase of tools and instruments in order to help trainees become self-dependent.

Proposal 16-17

One Social Center.

Proposal 16-18

Citizens advice bureaux.

Proposal 16-19

Limited direct financial aid for the needy.

Proposal 16-20

Initiating an employment office in each of Amman and Jerusalem.

Proposal 16-21

Modification of Labor Law such as to include bigger numbers of laborers.

Proposal 16-22

Establishment of a Vocational Training Institute.

Proposal 16-23

Encouragement of the formation of (14) trades, co-operatives and the expansion of existing co-operatives.

Proposal 16-24

To build 860 housing units by 21 housing co-operative societies.

Proposal 16-25

To encourage other non-agricultural co-operative societies.

CHAPTER 17 *TRADES AND SERVICES*

This is a broad sector of the economy including hotel, restaurant, recreation and tourist services, importing, exporting, wholesaling, retailing, commission agents, transportation, insurance, professional services, and personal and domestic services. This sector accounted for just over 29 per cent of gross domestic product in each of the three years 1959 to 1961. It is anticipated that this proportion will be maintained or increased slightly in the period 1964 to 1970.

The Trades and Services sector is almost entirely one of the private enterprise and should remain so. Much is to be done, however, that cannot be left to chance or the unco-ordinated decisions of private enterprise. To ensure that the necessary developments do occur, leadership must be provided by the Chambers of Commerce and by several departments of Government. In particular it is proposed that some of the licensing and surveillance functions which are carried out by a number of government departments should be co-ordinated in the Commerce Section and a new Foreign Trade Section, both in the Ministry of National Economy.

It is proposed that the Import-Export Supplies Department become an integral part of the Ministry and that the Department become the nucleus of a new Foreign Trade Section.

Hotel, restaurant and tourist services

Objectives

1) To provide the basic services required by a growing number of tourists. The number of tourists is expected to increase from 210,000 in 1962 to 827,000 in 1970. The Tourism Authority will expand its promotional program to increase the number coming to Jordan; the private sector will be mainly responsible for providing them with the kind of services and attractions which will lead them to stay longer, spend more, and recommend Jordan to others.

2) To provide services for a rapidly growing number of Jordanians.

3) To expand the alternative recreational and entertainment facilities available to tourists and residents.

Proposal 17-1. *Provision of services desired by tourists*

Retailers catering to tourists should be encouraged to move toward a policy of "fixed price" merchandising. The Chamber of Commerce should provide leadership in this direction, with support from the Commerce Section of the Ministry of National Economy.

The following are proposals elaborated in Chapter 7, Program for Tourism, but concern the Trades and Services Sector.

1) *Hotel Operators' Association* should be created for the purpose of exchanging information, finding solutions to common problems, and working toward the up-grading of hotel facilities and services. The Tourism Authority must take the first step in promoting such an Association, but thereafter should operate only in an advisory capacity.

2) *Hotel Training School* — a joint Tourism Authority — Hotel Operators Association undertaking graduating about 60 persons per year in courses of two and three years duration. These graduates will be available to help staff the rapidly increasing number of hotels required to meet the demands of tourists and Jordanians.

3) *Guide and Tourist Police School* soon to be operated by the Tourism Authority should be continued and expanded if necessary.

4) *Tourist Transportation Corporation.* A better system of transportation and guiding must be provided by private enterprise especially in visiting some of the more remote tourist sites. Guided tours in comfortable buses (preferrably air-conditioned for some routes) and operating on regular schedules can do much to encourage tourists to stay longer in Jordan, and should prove to be a profitable operation for private enterprise. Licenses to establish one or more such corporations should be granted even if doing so necessitates a change in concessions to existing transportation companies, unless the latter are willing to provide adequate service to tourists.

5) Riding stables, camel races, special festivals, tennis courts, deep sea fishing and water sports, all operated by private enterprise, should be encouraged by the Chambers of Commerce and the Tourism Authority.

6) Guide books and maps should have a sufficient demand to attract private entrepreneurs to produce and sell them.

Foreign Trade and Capital

Objectives

1) Promotion of exports.
2) Restraint of imports.
3) Encouragement of foreign investment in Jordan.

Proposal 17-2. *Creation of a Directorate of Commerce and Corporations in the Ministry of National Economy*

The present Import-Export Department should become the Directorate concerned with commerce at the Ministry of National Economy and should be included in the budget for 1965/66. The functions of this Directorate in the foreign field must be : -

1) Organize commercial relations between the Kingdom and other countries.

2) Study and draft trade agreements, supervise their implementation and modification where necessary so as to meet the requirements and development of the local production.

3) Tackle matters relating to Arab Economic Unity and Arab Common Market.

4) Organize and encourage marketing of Jordanian industrial and mineral products.

5) Organize local and international fairs in cooperation with the other concerned government authorities.

6) Define export and import policies and supervise the implementation of such policies.

7) Encourage foreign investment in Jordan.

8) Participate with other concerned government authorities in the application of the Israel boycotting regulations.

9) Study the establishment of free zones in Jordan and undertake their organization.

As a result of the establishment of this new Directorate of Commerce and Corporations, the Ministry of National Economy will consist of the following :

1) Public Administration
2) Directorate of Commerce and Corporations
3) Directorate of Industry and Electricity
4) Directorate of Mineral Wealth
5) Directorate of Agricultural Marketing

Proposal 17-3. *Appointment of Commercial Attaches to the Directorate of Commerce and Corporations*

Exports must be encouraged and facilitated by appointing commercial attaches in three or four of the most important nearby countries. They should report on market potentials, prices and developments in those markets, and assits Jordanian exporters to enter or increase their sales abroad. These appointees should be part of the Foreign Trade Section of the Ministry of National Economy.

Proposal 17-4. *Appointment of economists in the Directorate of Commerce and Corporations*

Several economists should be employed by the Foreign Trade Section to assemble the data and provide the analysis needed in negotiating trade agreements, in licensing of imports, and in providing information to foreign centers which will encourage exports and foreign investment.

Proposal 17-5. *Licensing of imports*

Import licensing and tariffs can be an important instrument of economic policy. The new Directorate of Commerce and Corporations and the Jordan Development Board in consultation with the Central Bank and departments concerned should maintain close contact in regard to imports, particularly concerning wheat, flour, food grains, rice, edible oils, cotton and other commodities available from the United States under Public Law 480. In general imports of consumption goods must be restricted in favour of capital goods.

Proposal 17-6. *Encouragement of Foreign Investment*

Foreign investment in Jordan must be encouraged, especially in industry. This should be done in several ways : -

a) A brochure "Investment in Jordan" just prepared by the Jordan Development Board, should be given wide distribution through Jordanian embassies in order to interest foreign industrialists and businessmen in Jordan.

b) The Directorate of Commerce and Corporations of the Ministry of National Economy with the assistance of the Jordan Development Board should supply Jordanian embassies with detailed material such as trade statistics and feasibility studies for distribution abroad.

c) The commercial attaches mentioned above should be charged with the responsibility of promoting foreign investment in Jordan as well as Jordanian exports abroad.

d) The present "Encouragement of Foreign Investment Law" should be reviewed by the Ministry of National Economy and the Jordan Development Board especially in regard to the proportion of shares which can be owned abroad. It is suggested that the present custom of limiting foreign share ownership to 49 per cent should be reconsidered.

Proposal 17-7. *Aqaba Port Stevadoring*

Aqaba port stevadoring should become the responsibility of the Port Authority. This service can be provided most efficiently as a monopoly, but the present complaints in regard to rates, timing, and damage indicate that the Port Authority should bear the responsibility for it.

Proposal 17-8. *Study of need for a Free Zone in Jordan*

The desirability of creating a Free Zone in Jordan including a bonded warehouse should be studied by the Directorate of Commerce and Corporations and the Jordan Development Board. The Free Zone would be of benefit in promoting in-transit trade and would be to the advantage of importers; however it involves considerable investment, skilled administration, and may have an undesirable effect in increasing imports. No financial provision has been made in the Plan for the Free Zone, but a study of its potential is desirable.

Proposal 17-9. *Expansion in the Estimation Department at Aqaba*

To accommodate the large range of products imported.

Proposal 17-10. *Speeding up the Customs Procedure*

Particularly at Aqaba, in order to prevent backlogs of imported goods at points of entry.

Wholesaling, Retailing, Commission Agents, Transportation Services and Insurance

Objectives

1) To improve efficiency of this sub-sector.

2) To co-ordinate a number of functions now performed by several government bodies.

Proposal 17-11. *Allocation of local duties for the Directorate of Commerce and Corporations of the Ministry of National Economy*

The Directorate of Commerce and Corporations of the Ministry of National Economy should be made responsible for all matters connected with internal trade. Its responsibilities should include the following :-

1) Recommend the issuance of licenses to wholesalers and retailers. Licences should be issued by the Ministry of Finance upon the recommendation of the above Directorate.

2) Undertake economic studies related to economic activities of the country in cooperation with other government agencies.

3) Supervise Chambers of Commerce and coordinate their affairs in accordance with the relevant laws and regulations.

4) Participate with concerned authorities in organizing matters related to internal transport especially tourist transportation.

5) Supervise the establishment of companies of all kinds and organize their registration.

6) Initiate effective control of activities of companies in accordance with the laws and regulations.

7) Study with other concerned authorities government participation in companies.

8) Recommend the nomination of government representatives on management boards of companies where government has equity participation, and direct such representatives in accordance with the set government policy.

9) Lay down accounting standards that would secure the preparation of accounts of companies in a way that would safeguard the shareholders, and make such accounts explanatory of the actual status of each company.

10) Control accounting practices.

11) Control the insurance business and supervise insurance companies.

12) Register and protect commercial and industrial ownership rights.

13) Prepare and organize commercial records.

14) Organize the affairs of commission agents.

15) Procure supply and equipment for government agencies.

16) Secure and provide local supplies including the distribution of vital commodities in the event of a crisis or a shortage in the supply of an essential commodity such as wheat or sugar as required by the national interest.

17) Supervise U.S. commodities under PL 480 programs on behalf of the Government. This involves storage of such commodities and the arrangement for their sale.

18) The new Standards and Measurements Bureau shall operate as a division of the Directorate of Commerce and Corporations. The Bureau will have the responsibility of introducing a better system of measurements, weights, and standards.

19) Chambers of Commerce and Industry shall have to cooperate with the concerned authorities in organizing short courses (perhaps nightly) in elementary accounting, and in principles of management for the benefit of all divisions of this sector.

Banking and Postal Savings are dealt with in Chapter 19.

Professional and Personal Services

Objective

To facilitate the process of obtaining professional and personal services by organizations and individuals.

Requirements

1) Two National Employment offices will be created in Amman and Jerusalem during 1965 by the Department of Labor of the Ministry of Social Affairs to assist the private sector in finding professional and semi-professional personnel. Further offices will be established in future years in other major centers, and extension made to less skilled workers at a later date. (See Proposal 16-18).

2) A National Register of Professional, Scientific and Related Personnel is being developed in the Jordan Development Board. This will be available through the Employment Service to all public and private organizations to assist them in obtaining the services of such personnel. It will also help to pinpoint the current and prospective shortages of such personnel. This Register must be kept current.

3) The Civil Service Department makes available its applicant files to the private sector. This is a desirable service to the private sector but, once the National Employment Service is in operation, these data should be made available through the Service.

4) A Manpower Survey was conducted in early 1964 of all private industry non-farm establishments employing 5 or more hired workers. This will give information on numbers, seasonality, occupations, categories (clerical, skilled, manual, etc.) which will be useful in pinpointing shortages or surpluses of various categories of labor and thus make it possible to adjust training in conformity with the market. This Survey (suitably amended in the light of experience and changed conditions) should be carried on an annual basis by the Jordan Development Board and the Department of Statistics.

Financial Requirements (above those of 1963)

Directorate of Commerce and Corporations	1965	1966	1967	1968	1969	1970
Commercial attaches						
Total Number	3	5	5	7	7	7
Annual cost (JD 000)	9	15	15	21	21	21
Extra Professional staff						
Total number	2	3	4	4	5	5
Annual cost (JD 000)	3	4.5	6	6	7.5	5.5
Total cost	12	19.5	21	27	28.5	26.5

SUMMARY

Proposal 17-1

Encouragement of retailers by the Union of Chambers of Commerce and the Directorate of Commerce and Corporations at the Ministry of National Economy in the direction of fixed price merchandizing for those catering to tourists.

Proposal 17-2

Creation of a new Directorate for Commerce and Corporations in the Ministry of National Economy, absorbing the present Import-Export Supplies Department and responsible for promoting exports, drafting trade agreements, arranging for participating in fairs, encouraging foreign investment, licensing imports. The Section should be created formally in the 1965 budget.

Proposal 17-3

Appointment of commercial attaches to promote exports. The first appointments should be made in 1965.

Proposal 17-4

The appointment of economists in the Directorate of Commerce and Corporations to undertake analytical and other studies.

Proposal 17-5

Close coordination in import licensing and tariff changes among the Directorate of Commerce and Corporations, Central Bank and Jordan Development Board.

Proposal 17-6

Encouragement of foreign investment through brochures, trade statistics, feasibility studies and personal contacts by commercial attaches, and by possible modification of "Encouragement of Foreign Investment Law", after study.

Proposal 17-7

Stevadoring at Port of Aqaba should become the responsibility of the Port Authority.

Proposal 17-8

Study of the desirability of establishing a "Free Zone" in Jordan.

Proposal 17-9

Expansion of Estimation Department at Aqaba.

Proposal 17-10

Speeding up customs procedures.

Proposal 17-11

Assigning local responsibilities of the Directorate of Commerce and Corporations of the Ministry of National Economy now borne by several government bodies and the consolidation of its functions that are performed by various other agencies.

CHAPTER 18 *FINANCIAL INSTITUTIONS*

The Seven Year Plan attaches significant importance to the role of the private sector. Of total development expenditures of JD 275 million programmed over the seven years, about 47 per cent should be undertaken by the private sector. No direct controls are envisaged to ensure the realisation of this level of private investment. Rather, heavy reliance is placed on private initiative and foresight to seek and exploit economic opportunities, operating through an imaginative and effective system of financial institutions. These institutions must be responsive to the Government's fiscal, monetary, and financial policies. The requisite fiscal measures called for under the Seven Year Plan have already been considered in Chapter 3. The present chapter discusses the program for financial institutions and highlights policy measures required to ensure rapid economic growth with a desirable degree of stability.

Recent Developments

Monetary and financial developments in Jordan have on the whole been appropriate to the stage of economic development in the country. The dinar has, since its introduction in 1950, been tied to and kept officially at par with the pound sterling. Given the "openness" of the Jordanian economy and its heavy dependence on foreign trade, this policy has been instrumental in maintaining domestic prices (relatively stable). The currency control measures applied have also been successful in achieving a reasonable degree of stability in the external value of the dinar. Commercial banks operations, although mainly oriented to short-term credits, have been satisfactory and helped strengthen businessmen's confidence and general outlook. Credits for agricultural and industrial development were expanded in recent years, primarily from facilities outside the banking system, but they continue to be inadequate to meet the growing needs of the private sector.

A number of financial institutions are currently operating in Jordan, in addition to the Jordan Central Bank which started its operations in

October 1964. The last few years have witnessed a noticeable expansion in the work of commercial banks, insurance companies, and saving and investment associations.

While there were 7 commercial banks and 17 branch offices in 1956, 9 such banks and 48 branch offices were operating in the country in September 1963. Total bills discounted and loans and advances to the private sector have increased by 232 per cent between the end of 1956 and the end of 1963. Furthermore, the share of banking services in gross domestic product at factor cost has increased from 0.53 per cent in 1959 to 0.76 per cent in 1963. Insignificant as the latter ratio might seem, it indicates a marked expansion in banking services and rapid growth of the "monetized" sector of the economy.

There is a number of specialized financial institutions such as the Agricultural Credit Corporation, the Municipal Loan Fund and the Industrial Development Fund. The main functions of these institutions are the provision of short-term and medium-term credit facilities at a comparatively low rate of interest to projects within the specialty of each of these institutions.

Notwithstanding these favourable financial developments, there is reason to believe that greater contributions to Jordan's economic development could have been made in the past through the country's financial institutions. Substantially greater contribution must be made in the future if the planned rate of economic development is to be achieved.

Program for Financial Institutions

Smooth and efficient operation of the economic system pre-supposes the existence of an organized and integrated financial structure. While the primary function of financial institutions in the monetary economy essentially remains that of providing necessary funds to finance the production process, it is crucial that adequate resources are diverted into those investment areas which contribute most effectively to economic development. Therefore, for self-sustained economic growth to take place, financial institutions should participate actively in the development effort and pursue policies consistent with national economic objectives.

The objectives set out for this sector are : -

1) Development of Jordan's financial structure (Central Bank, commercial banks, insurance companies, etc.) and its adaptation to the growth potential of the economy.

2) Design and adoption of a monetary and financial policy consistent with the over-all objectives of the Plan aimed at :-

- i) raising the propensity to save and invest productively;
- ii) provision of adequate credit (both private and public) for growth;
- iii) maintenance of a financially stable environment needed for growth.

Such a policy should be sufficiently flexible to cope with any short-run and unforseen disturbances which might arise during the Plan period. Further it should complement rather than supplant fiscal policy. In fact both policies should be closely coordinated because, while monetary policy instruments can curb inflationary and deflationary pressures, they are most effective when used in conjunction with appropriate fiscal measures. Therefore the relationship between monetary and fiscal policies and their impact on the various sectors of the economy should be well understood and should be the subject of periodic review and appraisal. In devising such policies the monetary and fiscal authorities as represented by the Central Bank, the Ministry of Finance and the Development Board should work closely together.

Proposal 18-1. *Activating the Full Program of The Central Bank.*

The Central Bank commenced operations on October 1, 1964. According to Law No. 4, 1959, as amended in 1960, the Central Bank is empowered to (a) issue and redeem Jordan dinars in exchange for pounds sterling; (b) maintain necessary reserves to ensure stability in the internal and external values of the dinar; (c) institutionalize credit in the interest of the country; and (d) act as the Government's fiscal agent. The Bank's Law has defined the means to achieve these ends. They are (a) organizing quantity and type of credit; (b) adoption of appropriate measures to combat domestic and world-wide economic and financial crises and transmit to the Council of Ministers its recommendations relating to economic and financial policies; (c) control commercial banks ; and (d) administration of Government deposits of gold and foreign exchange.

Management of the Bank's activities is entrusted to a Board of Directors made of the Governor, the Deputy Governor, and five other members representing the private sector. As noted earlier, members of the Board have been appointed by the Council of Ministers. Four of the five private sector members are from commercial banks. While this proportion may be desirable in the first year of operation, other sectors of the business community should be given greater representation in future appointments.

In view of the crucial importance attached to the role of the Central Bank in organizing and adapting Jordan's financial structure, first priority should be given to getting its full program of activities under way as soon as possible. The Bank's activities may be somewhat limited in its early years, yet every possible assistance must be exerted for the implementation of the objectives of the Plan.

Activating the full program of the Central Bank should include the following : -

a) Taking efficient steps towards the control of commercial banks operations in accordance with the "Control of Banks Law" and the "Control of Foreign Exchange Law" with the purpose of encouraging such banks to invest their extra assets in Jordan, and thus maintain national capital inside the country.

b) The Bank must establish, as soon as possible, in accordance with Article 37 of the Central Bank Law, an appropriate reserve requirement ratio which determines the proportion of its total deposits a commercial bank has to hold with the Central Bank. Proper administration of this measure should be sought in order to maintain an effective regulation of money supply.

c) In this connection, the Bank should devise and adopt measures aimed at encouraging greater use of demand deposits. Such a course is intended to render any future increase in *currency in circulation minimal*, without of course endangering public confidence and monetary stability. Table 1 shows the development of money supply and its composition during the period 1956-1963.

TABLE 1 Money Supply and its Composition — End of year (JD million)

	1956	1957	1958	1959	1960	1961	1962	1963
1. Currency in circulation	14.56	14.71	15.16	15.27	15.63	16.97	19.04	20.40
2. Demand deposits	5.68	7.49	9.17	8.97	10.46	11.95	14.43	16.45
3. Money supply (rows 1 & 2)	20.24	22.20	24.23	24.24	26.09	28.92	33.47	36.85
4. Row 2 as % of row 3	28.1	33.8	37.7	37.0	40.1	41.2	43.1	44.4

Source : I.M.F. International Financial Statistics, vol. XVIII, No. 4, April 1965.

It can be seen from this table that the ratio of demand deposits to money supply has been increasing steadily since 1956, except for the year 1959 when a slight reduction was recorded relative to 1958. An increase in this ratio tends to be associated with higher level of economic development, although factors like political stability, business trading practices, banking habits, liquidity preferences, and stage of urbanization play a significant role in determining its magnitude.

The Plan assumes that demand deposits will continue to represent an increasing proportion of money supply during the next seven years. Two advantages may be cited in support of this development. First, by making demand deposits a larger proportion of money supply, the Central Bank will have greater control over money supply. The second reason is related to the fact that Jordan maintains and is likely to continue to maintain the present cover arrangement which requires that currency in circulation be fully backed by foreign exchange reserves. Money supply will increase with Gross National Product. So, if demand deposits grow more rapidly than currency in circulation, then the amount of foreign exchange required as currency cover will increase less rapidly than the increase in money supply. Careful consideration should be given to this aspect. Possible actions to encourage such a trend would be (i) the elimination of stamp taxes on banks cheques and (ii) facilitating the clearance of cheques by opening other clearing offices in addition to those of Amman and Jerusalem when the need arises.

d) Devise and adopt appropriate credit policies aimed at the provision of credit facilities to the various sectors of the economy, especially in the fields of agriculture, industry, construction and housing. Commercial banks should be encouraged to provide more credit to those sectors. Further, the credit needs of the small entrepreneur should be carefully studied and ways devised to meet them more adequately.

e) Introduce measures to augment national savings through the establishment and growth of cooperative societies, savings and loans associations. The Central Bank is further urged to help create postal savings institutions in various parts of the country with the objective of attracting and promoting savings habits among low income groups. (See Proposal 18-3 below).

f) Encourage the development of a capital market. (See Proposal 18-4).

g) Encourage the sale of Government bonds to commercial banks, insurance companies, cooperative societies, savings and loans societies, and the public at large. The Seven Year Plan envisages the sale of Government bonds of JD 0.2 million in 1966, to be increased gradually to the level of JD 2.0 million by 1970. Considering the fact that bond issues represent a new financial development, it is suggested that a joint committee representing the Ministry of Finance, the Central Bank and the Development Board study ways and means of promoting bond sales. The issue of Government bonds earmarked to finance specific investment projects, coupled with an effective publicity campaign, will encourage the public to contribute to the country's developmental efforts.

Proposal 18-2. *Commercial Banking*

As has been noted earlier, the number of commercial banks and their branch offices has grown remarkably during the past eight years. Total bills discounted and loans and advances to the private sector have increased from JD 7.5 million at the end 1956 to JD 24.9 million at the end 1963.

Notwithstanding these commendable achievements, commercial bank operations have been heavily biased towards financing internal trade and imports and the investment of surplus funds abroad, particularly in sterling assets. Moreover, it is questionable whether commercial banks have exploited the domestic credit field as intensively as possible, consistent with sound banking policies.

Therefore, commercial banks are called upon to make greater contributions to the economic development of the country through effective and more intensive exploitation of domestic credit avenues. Greater attention than before should be given to the credit needs of (a) the industrial sector, with special reference to the needs of small artisans and craftsmen; and (b) the construction and housing sector, particularly as they relate to the construction of additional hotel facilities for tourists and to low-income housing units. Planned private investments in these areas are shown in aggregate form in Chapter 2, Table 5, and considered in greater detail in Chapters 9, 7, and 15 respectively. Where the amount of mortgage loans involved in any one project is too large to be attractive to a single bank, it is proposed that two or more banks cooperate in providing the total credit needed. Commercial banks are further urged to participate significantly in the purchase of Government bonds as they are issued.

Credit Supplying Agencies

There are at present four such public agencies in Jordan : the Agricultural Credit Corporation, the Industrial Development Fund, the Municipal Loan Fund, and the Village Loan Fund — with the last being attached to the Agricultural Credit Corporation. They were created by the

Government with foreign financial assistance to augment the flow of adequate resources into key sectors of the economy through extending term loans to the private sector and local governments. The loans are given at reasonable interest rates to help finance investment projects in the fields of agriculture, industry, tourism, and public utilities. While some progress has recently been made to increase the funds of these institutions, their lending capacities continue to be limited. As a result they operate largely as revolving funds.

Given the magnitude and character of private and local government investment envisaged in the Plan, the credit needs of these sectors are expected to grow markedly during the coming seven years. High priority must therefore be given to expand existing credit facilities. Present loan policies and procedures should also be carefully examined so that maximum benefits may thereby be realized.

The programs for these credit-supplying agencies are considered in the following sections :

a) *The Agricultural Credit Corporation*

Agricultural credit has been and continues to be one of the most difficult problems in Jordan. In view of agriculture's relatively low productivity and its susceptibility to widely varying levels of rainfall, the risks associated with agricultural credit have not attracted any large amounts of loanable funds from commercial banks. To rectify this situation and to protect farmers against further heavy indebtedness to local money lenders, the Government has adopted during the past fifteen years a number of measures aimed at expanding agricultural production through better and adequate credit facilities.

The Agricultural Credit Corporation was created in 1960; its paid-up capital amounted to JD 4,009,000, as on March 31st, 1963.

The primary function of the Corporation is to supply farmers with medium and long term loans directly, and with seasonal loans through agricultural cooperatives. These loans are given to finance agricultural investments, particularly those aimed at improving farmers' efficiency and expanding agricultural production. Loans may be given to improve and establish agricultural industries, provided they are approved by the Corporation's Board of Directors. During 1962/63, the loans given by the Corporation amounted to JD 1,024,000.

In view of the importance attached to agricultural development i realising the targets of the Seven Year Plan, serious efforts must be mad to strengthen the Agricultural Credit Corporation and to augment it resources. The program for this Corporation has already been considere in detail in Chapter 5. The table hereunder shows the total loans that sha be given by ACC (in JD 000's) : -

1964	1965	1966	1967	1968	1969	1970
1422	1572	1224	1889	1927	2080	2262

b) *The Industrial Development Fund*

The Industrial Development Fund is attached to the Jordan Developmen Board and can be considered the sole source of long term credit fo industrial purposes in Jordan. It was created in 1957 by combining th financial resources of three government projects which were initiated wit United States technical and financial assistance to develop the industria and tourism sectors. The Fund is described in detail in Chapter 9.

The broad purposes of the Fund are to increase industrial productio and employment through expanding exports and/or decreasing import Under current regulations, industrial loans are given for the purchase machinery only, whereas they are granted for construction, furniture an equipment in the case of hotels.

The loans given by the Fund since its creation through June 30, 196 amounted to JD 761,174 of which JD 404,205 went to industry and J 356,969 for hotel construction.

The Seven Year Plan calls for the establishment of an industria development bank with adequate resources such that it will be able t satisfy an increasing proportion of the credit needs of industry an tourism. These two sectors are expected to require during the coming seve years the following funds from the private sector (in JD 000's) : -

	1964	1965	1966	1967	1968	1969	1970
Industry	1080	1720	980	1070	1310	850	1140
Hotel Construction	900	1100	1700	1600	1600	1600	1200
Total	1980	2820	2680	2670	2910	2450	2340

c) *The Municipal Loan Fund*

This Fund was established in 1957 with United States financial assistance to provide municipalities with adequate means to help them carry out their development projects. The Fund is attached to the Development Board, and is administered by a Project Supervisor and a Municipal Loan Committee which consists of the Minister of National Economy (Chairman), a member of the Development Board, the Under Secretary of National Economy and the Secretary-General of the Jordan Development Board.

Loans are given to finance well-studied municipal projects in the areas of water supply, electricity generation and distribution, and other utilities.

During the period October 1, 1957 through June 30, 1963, the Municipal Loan Fund has given loans amounting to JD 2,167,987 distributed as follows : -

	JD
Water projects	978,815
Electricity	290,362
Street construction	465,110
Public buildings	184,600
Sewage systems	67,400
Bus stations	62,000
Slaughter houses	33,700
Other public utilities	86,000
Total	2,167,987*

In 1963 a loan agreement was concluded between the Government of Jordan and the International Development Association under which three and a half million dollars will be loaned by IDA to the Government and in turn reloaned to the municipalities of Ramallah, Zerka, Irbid, and Nablus for the purpose of financing their water projects. The amount of the IDA loan constitutes 70 per cent of the total cost involved. The remaining 30 per cent will be loaned to the four municipalities by the Municipal Loan Fund out of its own resources.

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* Excludes IDA loan of JD 714,288 (US $ 2,000,000) which was given to the Municipality of Amman.

The Plan calls for the establishment of an autonomous lending institution with sufficient resources to meet the needs of local governments for capital funds. It is proposed that this institution would also extend loans to the recommended housing corporation. As was shown in Chapter 2, Table 9, and in Chapter 20, net borrowings needed for municipal, rural and housing projects during the coming seven years will be as follows (JD 000's):

1964	1965	1966	1967	1968	1969	1970
200	1770	1294	1010	655	375	325

Proposal 18-3. *Establishment of Postal Savings Institutions*

It must be emphasized that individuals should be encouraged to increase their rate of saving and that these savings should be channelled into those investment outlets which contribute most effectively to achieving the goals of the Plan. In pursuance of this objective, it is proposed that a system of postal savings institutions be established by January 1966. A committee representing the Ministry of National Economy, Ministry of Finance, Ministry of Communications, Jordan Development Board, and the Central Bank should be set up before January 1965 to draft a law providing for the establishment of such a system. This law should be submitted to the Council of Ministers before March 1, 1965.

The purpose of postal savings institutions is to attract in the first place the savings of the low income rural and urban sections of the community. Educational publicity should be used to point out the advantages of placing savings at interest in postal savings accounts rather than accumulate them in the form of non-interest bearing hoards of cash and gold. The idea of introducing a system of cash prizes should be given careful consideration as a means to motivate people to deposit cash in postal savings institutions. Further, the interest rate paid on postal savings deposits should be guaranteed in full by the Jordan Government.

Proposal 18-4. *Development of a Capital Market*

Considering the state of recent economic and financial development in Jordan, serious efforts must be made to encourage and accelerate the growth of a capital market in the country. Although the development of such an institution is essentially a slow process, its early establishment would be instrumental in orienting Jordan's financial structure to the long-term growth requirements and potentialities of the economy.

The presence of an organized capital market will widen the scope of internal investment opportunities and attract domestic investible funds from flowing into conspicuous consumption and foreign security investment. More importantly, it will stimulate wider interest in equity-type securities and facilitate the flotation of, and trading in Government bond issues and equity shares of both existing and newly-established corporations.

Consequently a larger share of current savings and previously acquired investible funds would be invested in Jordanian bond and equity issues, thus making available increased financial resources for the development of the economy.

It is proposed that securities exchanges in both Amman and Jerusalem be established before January 1966. These offices should have direct wire connection with the other exchanges such that they could furnish immediate price quotations and place buy and sell orders for their customers. The securities exchange should handle both equity and non-equity types of securities. Brokerage offices could in time be established in other localities if justified by the anticipated volume of trading.

Preparatory to the implementation of such program, a committee representing the Ministry of Finance, the Ministry of National Economy, the Central Bank, and the Jordan Development Board should be formed to draw up a law for presentation to the Council of Ministers before the end of December 1965. In drafting this law careful consideration should be given to determining the size and composition of the board of governors which will manage the securities exchange, flotation procedures of equity and non-equity securities, and the level of commissions to be charged.

Proposal 18-5. *Regulation and Encouragement of Insurance Companies*

There are at present 28 insurance companies of which two have their head offices in Jordan. A draft law was submitted to the Council of Ministers in late 1963, establishing formal regulation of insurance activities with the object of expanding insurance business by Jordanian companies and the investment of their surplus funds domestically. It is recommended that this law be passed as soon as possible and that it be effectively enforced.

SUMMARY

Proposal 18-1

Activating the full program of the Central Bank so that it will carry out all of the responsibilities associated with central banking, including closer surveillance of commercial banks and the establishment and enforcement of a cash-reserve requirement.

Proposal 18-2

An increase in credit facilities by the commercial banks to accommodate industrial and agricultural development loans.

Proposal 18-3

Establishment of an Industrial Development Bank.

Proposal 18-4

Establishment of local governments development fund.

Proposal 18-5

Establishment of Postal Savings Institutions by January 1966.

Proposal 18-6

Development of a capital market by the establishment of a securities exchange by 1966.

Proposal 18-7

Regulation of insurance companies by passage of law already prepared and submitted to the Council of Ministers.

CHAPTER 19 *STATISTICS*

There can be no planning without statistical data; the usefulness of a plan is directly related to the accuracy and relevance of the statistical data on which it is based. The Statistics Department has already made its contribution to the earlier Five-Year Program and an even greater one to the present document; in particular the National Income Studies carried out by the Department provided an indispensable foundation for the preparation and presentation of the national aggregates set out in the tables in Chapter 2. The Department's Population Census has also provided important basic data.

However, there are gaps to be filled in the range of available statistics both in economic and social welfare fields, some of which may require continuing time series and other limited specific studies. The Department of Statistics has been rather heavily dependent on external technical advice, particularly on methodology for new ventures; though such advice will remain indispensable at least in the earlier years of the Plan, it is clearly desirable that local staff be associated with the technical direction of the Department's work as soon as possible, and eventually be wholly responsible for it.

Overall Objectives

The overall objectives are to strengthen the Department of Statistics to enable it to carry out, with a decreasing element of external assistance, the regular and non-regular collection, tabulation, analysis and publication of data essential to economic planning and appraisal, and to complete a number of special surveys and censuses during the period of the Plan.

Proposal 19-1. *Establishment of a Statistical Training Center in 1964*

A foreign expert will be assigned in 1964 for two years to establish a local training center in the Department, intended primarily for instruction in statistical techniques and routine operations at the sub-professional level. The operating cost of the center (about JD 3,000 annually) will be borne in 1964/65 by the Ford Foundation, but the Government will pay one-fourth in 1965/66 and an additional one-fourth in each succeeding year until it is bearing the full cost in 1968/69.

The expert will assist also in planning the Department's activities to achieve an optimum flow of work, and efficient assignment of staff responsibilities; his report will clarify staff requirement in some detail and therefore indicate the training program required.

Proposal 19-2. *Review of Statistical Series*

An expert committee with representatives from the Department of Statistics, the Ministry of National Economy, the Jordan Development Board, and the Ministry of Agriculture should be set up not later than July 1, 1964 to review all presently published statistical series to ascertain what further series (e.g. in health, construction, industrial production, labour, electricity, water supply, etc.) could usefully be included as staff becomes available, and what present series do not repay the effort expended on them.

Proposal 19-3. *Recruitment of Additional Staff*

Staff recruitment, over present levels, should proceed as follows :

TABLE 1 Additional Staff Required — Department of Statistics

	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	Total
University Graduates	1	1	1	1	—	—	—	4
Non-graduate statistical specialists	1	2	1	—	—	—	—	4
Secondary School Graduate	2	5	5	4	3	3	3	25
Punchers, coders	4	4	4	3	3	3	3	24

Proposal 19-4. *Addition of mechanical equipment*

Additional mechanical equipment will be required by the Department of Statistics as staff and output increase, to the extent of JD 4,000 in 1965/66 and JD 3,000 in each of 1966/67 and 1967/68.

Proposal 19-5. ***Study abroad***

In each year of the Plan, two members of the staff of the Department of Statistics will undertake study courses abroad, for periods of 6-12 months each. It is anticipated that funds will be available from foreign agencies for this purpose.

N.B. Detailed implementation of Proposals 19-4 and 19-5 is subject to amendment in the light of the report resulting from Proposal 19-1.

Proposal 19-6. ***Annual National Income Studies***

The National Income studies prepared for each year since 1959 by the Department will be continued as an annual commitment, with backward revision as techniques and basic data improve.

Proposal 19-7. ***Family Budget Survey and Cost of Living, Retail and Wholesale Price Indices***

A family Budget Survey will be undertaken with the assistance of a foreign consultant who will assist the Department, for one year in 1964/65, to draw up the basic questionnaires, etc., in order to construct a cost-of-living index. He will also advise on the possibility of constructing retail and wholesale price indices. Local participation will be provided by a member of the Department's staff currently studying the relevant techniques in the USA.

Proposal 19-8. ***Industrial Census***

An industrial census will be carried out. During 1969/70 a foreign expert will work for six months with the Department to set up the preparatory work for the census which will extend into 1970/71.

Proposal 19-9. ***Manpower Studies***

An ILO expert, in cooperation with the Department of Statistics and the Jordan Development Board, began in October 1963 a general manpower study for the Kingdom. The initial survey should be complete by the end of 1963/64 but tabulation of data and preparation of the report will extend into 1964/65. Thereafter the survey will be repeated annually in cooperation with the Jordan Development Board to form part of the Department's continuing commitments. In view of the importance of the data and the magnitude of the task it is considered that a special section should be set up in the Department to deal with this sector alone. A statistical study of transport will be carried out in 1966/67 with funds allocated to manpower studies.

Proposal 19-10. *Agricultural Census*

In a largely agricultural country, accurate data on basic agricultural resources are essential to rational planning. An agricultural census will be undertaken, in collaboration with the Ministry of Agriculture, during the period 1965/66 to 1966/67. During the first year, a foreign expert will advise the Departments concerned in setting up procedures, training enumerators and so on. In 1965/66 the data will be collected and in 1966/67 it will be tabulated and analyzed for publication.

Proposal 19-11. *Statistics of Agricultural Production*

Statistics of agricultural production are notoriously difficult to obtain; their importance is great enough to call for special efforts to improve them. A pilot project aimed at improving the statistics of agricultural production was begun in 1963/64 by a foreign expert in collaboration with the Department of Statistics and the Ministry of Agriculture. A full survey based on the pilot project will extend from 1964/65 to 1966/67. The possibility of undertaking a statistical study of construction and buildings shall be considered also for 1966/67.

Proposal 19-12. *Agricultural Marketing Statistics*

Data on agricultural marketing is as important and as difficult to obtain as production statistics. During 1965/66 a foreign expert will advise the Bureau of Agricultural Marketing and the Department of Statistics on the collection, tabulation and analysis of marketing data to provide basic information for the improvement of marketing facilities and conditions.

Proposal 19-13. *Statistics on Hotels and Tourists*

As from 1966/67 a statistical study will be carried out annually for the Kingdom's potentialities for tourism and hotel facilities.

Financial Requirements

Tables 2 and 3 which follow give total financial requirements for the Department of Statistics (over the 1963/64 level) and contributions thereto in the Jordan Budget respectively.

TABLE 2 Department of Statistics — Total Financial Requirements (G.O.J. Budget) Additional to 1963-64 (JD 000's)

Proposal No.	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
1. Training	—	0.77	1.54	2.3	3.0	3.0	3.0
2. Review of Series	—	—	—	—	—	—	—
3. Additional Staff	2.0	6.8	10.9	14.0	15.8	17.6	19.4
4. Mechanical Equipment	—	4.0	3.0	3.0	—	—	—
5. Foreign Training	—	—	—	—	—	—	—
6. National Income Studies	—	—	—	—	—	—	—
7. Family Budget Survey	—	—	2.0	—	—	—	—
8. Industrial Census	—	—	—	—	—	5.0	5.0
9. Manpower Study	—	1.0	1.0	1.0	1.0	1.0	1.0
10. Agricultural Census	—	—	—	—	—	—	—
11. Agr. Prod. Statistics	1.0	1.0	1.0	—	—	—	—
12. Agricultural Marketing	—	—	—	—	—	—	—
13. Tourist & Hotel Statistics	—	—	4.0	4.0	4.0	4.0	4.0
Total	3.0	13.57	23.44	24.3	23.8	30.6	32.4

TABLE 3 Department of Statistics — Total Financial Requirements, Additional to 1963-64 (JD 000's)

Proposal No.	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
1. Training Center	10.0	10.0	3.0	3.0	3.0	3.0	3.0
2. Review of Series	—	—	—	—	—	—	—
3. Additional Staff	2.0	6.9	10.9	14.0	15.8	17.6	19.4
4. Mechanical Equipment	—	4.0	3.0	3.0	—	—	—
5. Foreign Training	3.5	3.5	3.5	3.5	3.5	3.5	3.5
6. National Income Studies	—	—	—	—	—	—	—
7. Family Budget Survey	—	—	9.0	—	—	—	—
8. Industrial Census	—	—	—	—	—	8.5	5.0
9. Manpower Study	—	1.0	1.0	1.0	1.0	1.0	1.0
10. Agricultural Census	5.0	60.0	5.0	—	—	—	—
11. Agr. Prod. Statistics	4.5	1.0	1.0	—	—	—	—
12. Agricultural Marketing	—	—	—	—	—	—	—
13. Tourist & Hotel Statistics	—	—	4.0	4.0	4.0	4.0	4.0
Total	25.0	86.4	40.4	28.5	27.3	37.6	35.9

SUMMARY

Proposal 19-1

A statistical training center will be established in the Department of Statistics, and a foreign consultant will assist in running the center and in planning the activities of the Department of Statistics.

Proposal 19-2

All present published statistical series will be reviewed by an expert committee to determine desirable alterations.

Proposal 19-3

Additional staff will be recruited.

Proposal 19-4

Additional mechanical equipment will be purchased.

Proposal 19-5

An overseas training program for some of the staff of the Department of Statistics will be carried out.

Proposal 19-6

National income studies will be continued and improved.

Proposal 19-7

A family budget survey will be undertaken. Cost of living index and price indices will also be considered.

Proposal 19-8

An industrial census will be undertaken.

Proposal 19-9

A manpower study will be completed and will be repeated annually.

Proposal 19-10

An agricultural census will be undertaken.

Proposal 19-11

Statistics of agricultural production will be improved.

Proposal 19-12

Agricultural marketing in the country will be studied aiming at improving marketing facilities and conditions, in cooperation with the Marketing Bureau.

Proposal 19-13

Initiating an annual statistical study of potentialities for tourism and hotels.

CHAPTER 20 *LOCAL GOVERNMENTS*

Municipalities in Jordan like their counterparts throughout the world are growing rapidly both in size and number. Currently there are 50 municipalities compared with 41 in 1958/59. At the time of the 1961 census approximately 46 per cent of the population lived in municipalities. Although the exact statistics on the rural-urban population distribution for 1951 are not available, best estimates put population distribution at that time at only 33 per cent urban and the remainder rural. Thus there has been a remarkable shift of the population from rural into urban centers. In addition, of course, the total population of the Kingdom has been expanding, so that the magnitude of the influx of people to the municipalities is even greater.

The population of the District of Amman which includes the cities of Amman and Zerka expanded by 59 per cent between 1959 and 1963. Financial statistics also bear out the large growth in municipalities and the demands put upon them. In 1958/59 expenditures were approximately JD 1.7 million for existing municipalities. Three years later expenditures by the municipalities had increased 50 per cent. Considering the water projects still needed, the sewage projects needed, electricity and other public works needed, there is little doubt that the expansion of municipalities' expenditures will continue during the life of the Seven Year Plan. Although the needs and the problems of municipalities in Jordan are large, these needs and problems are little different from those which municipalities are facing all over the world in developed and developing countries.

Municipalities in Jordan fit into the Government structure in the following manner : A city council is elected by the citizens of the municipality. From this group a mayor is then appointed by the Central Government. A number of municipalities are then organized into geographical areas. These districts are presided over by a mutasarref or district commissioner. In the larger districts there may be sub-districts between the mayor and the mutasarref presided over by a qaemmaqam, or assistant district officer. The mutasarref then reports to the Under

Secretary for municipalities of the Ministry of Interior. As was pointed out in the Five Year Plan for Jordan, it may be argued that the location of the Municipal Affairs Department in the Ministry of Interior gives it a regulatory and inhibiting outlook towards municipal affairs since the Ministry is preoccupied with police and political and administrative matters as opposed to municipal development. Some recognition of this is found in the fact that the Mayor of Jerusalem and the Mayor of Amman do not report to the Under-Secretary of Municipal Affairs at all but report directly to the Prime Minister.

The major responsibilities assigned to municipalities include the construction and maintenance of roads and streets in the municipalities, street lighting, parks, water, sewage, municipal offices, and associated buildings such as libraries, bus stations, municipal markets, services such as fire protection, municipal police to enforce municipal law, garbage collection, and general inspection of items for public health purposes. Many municipalities also own their own electricity facilities and operate health clinics.

Revenue sources for the municipalities come from inspection fees on meat, vegetables and fruits, on charges for water, on funds given to them from automobile licenses, from fines collected, licenses for use of buildings and part of the land and building taxes collected by the Central Government. For capital projects of any magnitude municipalities are forced to borrow. Small amounts can be borrowed through the Municipal Loan Fund. Larger amounts for projects such as the Amman sewage project must be borrowed with the help and guarantee of the Central Government. At present roughly one-third of the funds spent by the municipalities are collected by the Central Government and remitted to them. Another ten per cent of their funds are collected by intermediaries, fifteen per cent of their funds comes from water sales and the remainder from taxes and fees collected by the municipality, revenue from electricity, income from municipal property and various minor items. In the aggregate about two-thirds of the expenditures of municipality budgets of 1962/63 and 1963/64 were allotted to capital projects.

Proposal 20-1. *Study of Local Governments*

In 1964 a team consisting of members of the Ministry of Interior and the Jordan Development Board, along with a foreign expert should be appointed to conduct a thorough study of local governments. This study should include the position of local governments in the over-all government structure, the responsibilities of local governments, their administration, their financing, and the appropriate form of assistance required for town and country planning. The study should include an examination of the duties and responsibilities of the ministry for municipal and village affairs, to which will be added the responsibility for housing.

Village Councils

For the villages the system of local government differs between the villages of the west bank of Jordan and those of the east bank. In the west bank the villages have councils appointed by the Ministry of Interior to carry out the work of the villages. The relation of these village councils to the Ministry of Interior is quite similar to that of the municipal councils.

In the east bank most villages have no councils and daily work is carried through mutual understanding between the mukhtars, the heads of the family clans, and the administrative representative of the Ministry of Interior in the area.

Both of these village government arrangements are legacies of the past, the first inherited from the British Mandate while the other is a continuation of the Ottoman techniques. Diversity of systems of organizations is damaging to the efforts of both the villages and the Central Government. It frequently results in duplication and waste of energy and may be a hindrance to the growth and development of these villages. Uniformity of law and organization must replace this diversity in order that growth should be uniform in all sectors of the community.

Proposal 20-2. *Uniformity of Village Administration*

Depending upon the recommendations of the team appointed under Proposal 20-1, the form of administration of villages, and their relationship to the Central Government should be made uniform throughout the Kingdom.

Provision of services

Proposal 20-1 should result in an improved local government structure, and a better appreciation of the long run and short run financial requirements and sources of revenue for local governments.

Within most municipalities and villages there is an immediate need to expand and modernize the water, sewage and electricity facilities, the roads, municipal buildings and schools to meet the demands of growing communities. To finance the capital facilities required, and to provide the various services expected of local governments, new and growing sources of revenues must be found.

The target increases in capital and recurring expenditures for municipalities during the life of the Plan was presented in Chapter 2 Table II. Part of this table is reproduced below to provide the framework for the discussion of the municipal program of the Seven Year Plan.

TABLE 1 Municipal Expenditures (JD 000's)

	1963	1964	1965	1966	1967	1968	1969	1970
1. Current Expenditures	1565	1659	1759	1864	1976	2095	2220	2354
2. Capital Expenditures	1204	1200	2300	2320	2270	2310	2150	2250
3. Total Expenditures	2769	2859	4059	4184	4246	4405	4370	4604

Notes on Above
Row 1. 1964-1970, 6 per cent per year increase based on 1963.
2. Capital expenditures include water projects.

Table 1 indicates that the specific water projects of local governments account for the bulk of the capital spending in the early years of the Plan. The details of these projects have been given in Chapter 6 in the Program for Water.

Proposal 20-3. *Establishment of a Local Government Development Fund*

One of the major sources for financing municipal capital projects is the Municipal Loan Fund. Currently, however, the Fund has no loanable funds to make available to municipalities except for approximately JD 150,000 per year received in loan repayments. This revolving fund is inadequate relative to present needs of the municipal governments, and will become even less adequate as the municipalities grow in size.

The Fund is presently included among the projects of the United States Agency for International Development and as such it was recently declared ineligible for a U.S. Development Loan Fund loan. It is proposed that the Jordan Development Board request the United States Agency for International Development to remove the Municipal Loan Fund from its list of projects.

The Village Loan Fund was created in 1955 and has been the sole source of finance for many village improvement projects. It is presently administered by the Agricultural Credit Corporation, with a staff of about 16 persons specializing in the Fund's activities.

The Fund's capital is completely obligated and, like the Municipal Loan Fund, it has become a revolving fund which depends upon repayments in order to advance loans. These amounts are inadequate to meet the increasing requirements of the villages.

It is therefore proposed that an autonomous institution be created which would incorporate the existing Municipal Loan Fund and the Village Loan Fund and provide it with adequate funds to meet the needs of local governments.

Proposal 20-4. *Expanded Program of Town and Country Planning*

At present the United Nations has a town planning advisor assigned to the Ministry of Interior-Municipal and Rural Affairs. He attempts to advise on town and rural planning for all municipalities except for Jerusalem, which has its own planning team. Town planning is vital to the proper growth of the Kingdom, especially with the rapid growth of the urban areas. Work in this area has been seriously handicapped for many years by the lack of staff.

It is proposed that in 1964 a town and country planning unit be created within the Jordan Development Board. Depending upon the recommendations of the study described in Proposal 20-1, the unit should be transferred later to the appropriate ministry.

Positive planning in any area, if it is to suit present and future purposes, should develop in an orderly manner to prevent the haphazard location of buildings, roads, and services which will prove ultimately wasteful. One of the essential tools to effective town planning is adequate aerial photographs. It is proposed, therefore, that appropriations should be included in the budget for 1965/66 for completing aerial photographs of all municipalities and villages in Jordan.

Proposal 20-5. *Adoption of Town and Country Planning Ordinance*

A draft town and country planning ordinance has been prepared at the request of His Excellency, the Prime Minister. Without this ordinance, municipalities are limited in their town planning activities. This ordinance should be adopted as soon as possible.

Proposal 20-6. ***Incorporation of Amman Municipality with the Ministry to be established under proposal 20-1***

The aim of attaching Amman Municipality with the Prime Minister's office instead of the Under-Secretary of Interior for Municipalities is to make it more important and quickly implement its requirements. In case a special ministry is set up for Municipal and Rural Affairs, Amman municipality will be attached to it.

Proposal 20-7. ***Studying the Situation of the Frontier Villages***

The formation of a committee in 1965 from the Ministries of Defence, Social Affairs and Labor, Municipal and Rural Affairs, Reconstruction and Development and the Jordan Development Board to study economic and social aspects of life in the frontier villages, and recommend methods for these villages to develop them and stop their people from migration.

SUMMARY

Proposal 20-1

In 1964 a major study should be undertaken of the position of local governments in the over-all government structure, the responsibilities of local governments, their administration, financing, and planning requirements.

Proposal 20-2

The system of government in all villages of Jordan should be made uniform by legislative or administrative action.

Proposal 20-3

Establishment of a Local Government Development Fund that would incorporate the existing Municipal Loan Fund and the Village Loan Fund and expand its resources to meet the local needs.

Proposal 20-4

A town and country planning unit should be created in 1964 in the Jordan Development Board, and transferred to the appropriate ministry as recommended by the study of Proposal 20-1.

Proposal 20-5

The draft ordinance on town and country planning should be adopted.

Proposal 20-6

Incorporate Amman Municipality with the Ministry of Interior for Municipal and Rural Affairs.

Proposal 20-7

Study the situation of the frontier villages.